Government
Publications

# SESSIONAL PAPERS.

VOL. XXIII.—PART VII.

## FIRST SESSION OF SEVENTH LEGISLATURE

OF THE

## PROVINCE OF ONTARIO.

SESSION 1891.

Toronto:
PRINTED FOR LUD. K. CAMERON, QUEEN'S PRINTER,
BY WARWICK & SONS, 68 AND 70 FRONT ST. WEST,
1891.

LIBRARY
JUL 1 1966
UNIVERSITY OF TORONTO

1091258

# LIST OF SESSIONAL PAPERS.

ARRANGED ALPHABETICALLY.

| Title. | No. | Remarks. |
|---|---|---|
| Accounts (*Ontario and Quebec*) | 48 | *Printed.* |
| Accounts, Public | 19 | " |
| Agricultural and Arts, Report | 5 | " |
| Agricultural College, Report | 40 | " |
| Agricultural Societies, Analysis | 41 | *Not printed* |
| Agricultural text book, Order in Council | 32 | " |
| Algoma, leases of lands in | 56 | " |
| Asylums, Report | 6 | *Printed.* |
| Bee-keepers' Association, Report | 66 | *Printed.* |
| Births, Marriages and Deaths, Report | 3 | " |
| Blind Institute, Report | 9 | " |
| Canadian Institute, Report | 21 | *Printed.* |
| Common Gaols, Report | 7 | " |
| Common School lands collections | 63 | " |
| Crown Lands, Report | 34 | " |
| Dairymen's Association, Report | 36 | *Printed.* |
| Davis, Judge, Surrogate Fees to | 22 | *Not printed.* |
| Deaf and Dumb Institute, Report | 8 | *Printed.* |
| Division Courts, Report | 38 | " |
| Education, Report | 4 | *Printed.* |
| " publication of French reader | 26 | *Not printed.* |
| " Morrisburg Coll. Institute | 27 | " |
| " Aylmer Coll. Institute | 28 | " |
| " Gravenhurst High School | 29 | " |
| " Norwood Board of | 30 | " |
| " conveyance to N. A. Land Co'y | 31 | " |
| " compulsory Education | 33 | *Printed.* |
| " publication of text books | 39 | *Not printed.* |
| " salaries in Normal Schools | 47 | *Printed.* |
| Election Returns | 1 | " |
| Elgin House of Industry, Report | 42 | *Not printed.* |
| Entomological Society, Report | 15 | *Printed.* |
| Estimates | 20 | " |
| Experimental Union, Report | 37 | " *as part of Agricultural Coll. Report.* |

| Title. | No. | Remarks. |
|---|---|---|
| Factories, Report | 60 | *Printed.* |
| Forestry, Report | 16 | " |
| Fruit Growers, Report | 12 | " |
| Gaols, Report | 7 | *Printed.* |
| Health, Report | 52 | *Printed.* |
| Hospitals, Report | 10 | " |
| Immigration, Report | 35 | *Printed.* |
| Industries, Report | 67 | " |
| Insurance, Report | 2 | " |
| Judicature Act, commutation | 22 | *Not printed.* |
| " " | 25 | " |
| " " | 43 | " |
| " " | 49 | " |
| Keewatin Lumber Co'y., lease to | 56 | *Not printed.* |
| Land Improvement Fund | 63 | *Printed.* |
| Legal Offices, Report | 58 | " |
| Lion Provident Life Association | 55 | *Not printed.* |
| Liquor License by-laws, quashed | 65 | *Printed.* |
| Magdalen Asylums, Report | 11 | *Printed.* |
| Mines, Report of Inspector | 68 | " |
| Mosgrove, Judge, Order in Council | 49 | *Not printed.* |
| Muir, Judge, Order in Council | 25 | " |
| Orphan Asylums, Report | 11 | *Not printed.* |
| Parry Sound, Election | 54 | *Not printed.* |
| Practical Science Report (*part of*) | 4 | *Printed.* |
| Prisons Commission, Report | 18 | " |
| Prisons, Report | 7 | " |
| Proton Grammar School lands | 61 | " |
| Proton, Resolutions *re* school lands | 62 | " |
| Public Accounts | 19 | " |
| Public Works, Report | 17 | " |
| Queen Victoria Niagara Falls Park, Report | 51 | *Printed.* |
| Reformatories, Report | 7 | *Printed.* |
| Refuge, House of, Report | 11 | " |
| Registrars' Fees | 39 | " |
| Scientific Institutions, Reports (*part of*) | 4 | *Printed.* |
| Secretary and Registrar, Report | 53 | " |
| Stationary Engines | 45 | " |
| Statutes, distribution of | 23 | *Not printed.* |
| Statutes, " | 24 | " |

| Title. | No. | Remarks. |
|---|---|---|
| Tavern and Shop Licenses, Report | 13 | *Printed.* |
| Text Books, publication | 39 | *Not printed.* |
| Timber berths under license | 46 | *Printed.* |
| Timber Limits sales | 44 | " |
| Timber Limits, W. Algoma | 59 | *Not printed.* |
| Titles, Master of, Report | 50 | *Printed.* |
| Toms, Judge, Order in Council | 43 | *Not printed.* |
| Toronto University, Report (*part of*) | 4 | *Printed.* |
| " Revenue and Requirements, Report | 64 | " |
| Upper Canada College, Report (*part of*) | 4 | *Printed.* |
| " Bursar's statements | 14 | " |

# LIST OF SESSIONAL PAPERS.

*Arranged in Numerical Order, with their titles at full length; the Dates when Ordered and when Presented to the Legislature; the name of the Member who moved for the same, and whether Ordered to be Printed or not.*

## CONTENTS OF PART I.

No. 1.. Return from the Records of the General Election to the Legislative Assembly in 1890, shewing:—(1) The number of Votes polled for each Candidate in each Electoral District in which there was a contest. (2) The majority whereby each successful Candidate was returned. (3) The total number of Votes polled in each District. (4) The number of Votes remaining unpolled. (5) The number of names on the Voters' List in each District. (6) The population of each District as shewn by the last Census. (7) Similar Statements as to any Elections held since the General Elections. Presented to the Legislature, 12th February, 1891. (*Printed.*)

No. 2.. Detailed Report of the Inspector of Insurance for the year ending 31st Decem- 1889. Presented to the Legislature March 10th, 1891. (*Printed.*)

No. 3.. Report of the Registrar-General, relating to the Registration of Births, Marriages and Deaths for the year 1889. Presented to the Legislature 22nd April, 1891. (*Printed.*)

## CONTENTS OF PART II.

No. 4.. Report of the Minister of Education for the year 1890, with the Statistics of 1889, in which is included the Reports upon the Scientific Societies, Toronto University, School of Practical Science and Upper Canada College. Presented to the Legislature 13th March, 1891. (*Printed.*)

No. 5.. Report of the Council of the Agriculture and Arts Association for the year 1890. Presented to the Legislature 10th April, 1891. (*Printed.*)

## CONTENTS OF PART III.

No. 6.. Report upon the Lunatic and Idiotic Asylums for the year ending 30th September, 1890. Presented to the Legislature 10th March, 1891. (*Printed.*)

No. 7.. Report upon the Common Gaols, Prisons and Reformatories of the Province, for the year ending 30th September, 1890. Presented to the Legislature 3rd April, 1891. (*Printed.*)

No. 8.. Report upon the Institution for the education of the Deaf and Dumb, Belleville, for the year ending 30th September, 1890. Presented to the Legislature 10th March, 1891. (*Printed.*)

No. 9.. Report upon the Institution for the instruction of the Blind, Brantford, for the year ending 30th September, 1890. Presented to the Legislature 10th March, 1891. (*Printed.*)

No. 10.. Report upon the Hospitals of the Province for the year ending 30th September, 1890. Presented to the Legislature 10th April, 1891. (*Printed.*)

No. 11.. Report upon the Houses of Refuge and Orphan and Magdalen Asylums for the year ending 30th September, 1890. Presented to the Legislature 20th April, 1891. (*Printed.*)

No. 12.. Report of the Fruit Growers Association for the year 1890. Presented to the Legislature 16th March, 1891. (*Printed.*)

No. 13.. Report upon the working of the Tavern and Shop Licenses Acts for the year 1890. Presented to the Legislature 10th March, 1891. (*Printed.*)

## CONTENTS OF PART IV.

No. 14.. Statements of the Bursar of Upper Canada College, of cash transactions, for the year ending 30th June, 1890. Presented to the Legislature 16th March, 1891. (*Printed.*)

No. 15.. Report of the Entomological Society of Ontario for the year 1890. Presented to the Legislature 16th March, 1891. (*Printed.*)

No. 16.. Report on Forestry, 1889-90. Presented to the Legislature 24th March, 1891. (*Printed.*)

No. 17.. Report of the Commissioner of Public Works for the year 1890. Presented to the Legislature 11th March, 1891. (*Printed.*)

No. 18.. Report of the Commission appointed to enquire into the Prison and Reformatory system of the Province. Presented to the Legislature 30th April, 1891. (*Printed.*)

## CONTENTS OF PART V.

No. 19.. Public Accounts of the Province for the year 1890. Presented to the Legislature 16th March, 1891. (*Printed.*)

No 20.. Estimates for the service of the Province until the Estimates for the year are finally passed. Presented to the Legislature 12th February, 1891. (*Not printed.*) Estimates for the year 1891. Presented to the Legislature 23rd March, 1891. (*Printed.*) Estimates for the service of the Province until the Estimates for the year are finally passed. Presented to the Legislature 31st March, 1891. (*Not printed.*) Supplementary Estimates for the year 1891. Presented to the Legislature 1st May, 1891. (*Printed.*)

No. 21.. Report of the Canadian Institute, 1890-91. Presented to the Legislature 3rd April, 1891. (*Printed.*)

No. 22.. Copy of an Order of His Honour the Lieutenant-Governor in Council respecting the payment of Surrogate Court Fees to His Honour Judge Davis under the provisions of 52 Vic., Cap. 10, Sec. 5. Presented to the Legislature 10th March, 1891. (*Not printed.*)

No. 23.. Return from the Queen's Printer as to the disposal of the Sessional Statutes. Presented to the Legislature 10th March, 1891. (*Not printed.*)

No. 24.. Statement from the Queen's Printer as to the disposal of the Revised Statutes. Presented to the Legislature 10th March, 1891. (*Not printed.*)

No. 25.. Copy of an Order in Council respecting the payment of Surrogate Court fees to His Honour Judge Muir, under the provisions of 52 Vic., Cap. 10, Sec. 5. Presented to the Legislature 11th March, 1891. (*Not printed.*)

No. 26.. Copy of an Order in Council approving of an agreement with the Rose Publishing Company for the publication of a High School French Reader. Presented to the Legislature 11th March, 1891. (*Not printed.*)

No. 27.. Copy of an Order in Council raising the High School of Morrisburg to the standing of a Collegiate Institute. Presented to the Legislature 11th March, 1891. (*Not printed.*)

No. 28.. Copy of an Order in Council raising the High School at Aylmer to the standing of a Collegiate Institute. Presented to the Legislature 11th March, 1891. (*Not printed.*)

No. 29.. Copy of an Order in Council approving of a By-law of the County of Simcoe, establishing a High School at the Town of Gravenhurst. Presented to the Legislature 11th March, 1891. (*Not printed.*)

No. 30.. Copy of an Order in Council conveying to Thomas Maitland Grover, certain land in the Village of Norwood in exchange for other lands conveyed by him to the Board of Education of Norwood. Presented to the Legislature 11th March, 1891. (*Not printed.*)

No. 31.. Copy of an Order in Council conveying to the North American Land Company, Limited, certain lands at one time vested in the Toronto Collegiate Institute Board in trust, but surrendered to Her Majesty. Presented to the Legislature 11th March, 1891. (*Not printed.*)

No. 32.. Copy of an order in Council approving of an agreement with the J. E. Bryant Company, Limited, for the publication of an agricultural text-book. Presented to the Legislature 11th March, 1891. (*Not printed.*)

No. 33.. Report on Compulsory Education in Canada, Great Britain, Germany and the United States. Presented to the Legislature 20th March, 1891. (*Printed.*)

## CONTENTS OF PART VI.

No. 34.. Report of the Commissioner of Crown Lands for the year 1890. Presented to the Legislature 1st April, 1891. (*Printed.*)

No. 35.. Report of the Department of Immigration for the year 1890. Presented to the Legislature 16th April, 1891. (*Printed.*)

No. 36.. Report of the Dairymen's Association for the year 1890. Presented to the Legislature 2nd May, 1891. (*Printed.*)

No. 37.. Report of the Ontario Agricultural and Experimental Union for the year 1890. Presented to the Legislature 22nd April, 1891. (*Printed as part of Agricultural College Report.*)

No. 38.. Report of the Inspector of Division Courts for the year 1890. Presented to Legislature 20th March, 1891. (*Printed.*)

No. 39.. Return to an Order of the House of the nineteenth day of March, 1890, shewing copies of all correspondence on the subject of preparing or publishing school text books, with a statement of all sums paid in connection with the preparation or publication of school text books subsequent to that already brought down, with the award of the arbitrators thereon. Presented to the Legislature 20th March, 1891. Mr. *Preston.* (*Not printed.*)

No. 40.. Report of the Ontario Agricultural College and Experimental Farm for the year 1890. Presented to the Legislature 22nd April, 1891. (*Printed.*)

## CONTENTS OF PART VII.

No. 41. Analysis of Reports of County and Township Agricultural and Horticultural Societies in Ontario for the year 1889. Presented to the Legislature 6th April, 1891. (*Not printed.*)

No. 42.. Report of the Inspector of the Elgin House of Industry and Refuge for the year ending 31st October, 1891. Presented to the Legislature 24th March, 1891. (*Not printed.*)

No. 43.. Copy of an Order in Council respecting the commutation of fees payable under the Surrogate Courts Act to His Honour, Judge Toms, Judge of the County Court of the County of Huron. Presented to the Legislature 31st March, 1891. (*Not printed.*)

No. 44.. Statement of Sales of Timber Limits held 1st October, 1890. Presented to the Legislature 2nd April, 1891. (*Printed.*)

No. 45.. Return to an Order of the House of the seventeenth day of February, 1890, shewing the number of stationary steam engines and boilers in each of the municipalities of the Province, and for what purpose used. Presented to the Legislature 7th April, 1891. Mr. *Phelps.* (*Printed.*)

No. 46.. Return to an Order of the House of the twenty-eighth day of February, 1890, shewing, so far as the records of the Department of Crown Lands will enable the information to be given, the number, area and location of each timber berth or other territory now under license, the date when such berth or territory was first placed under license, and the name of the original licensee and of the person in whose name such license stood on the first day of January last. Also, shewing the bonus *per* square mile received for each such limit, and a rough map or plan shewing the area now under license. Presented to the Legislature 8th April, 1891. Mr. *Meredith.* (*Printed.*)

No. 47.. Copy of a Minute of the Department of Education dated 25th March, 1891, approving of certain rules with respect to the Salaries of Teachers in the Provincial Normal and Model Schools. Presented to the Legislature 13th April, 1891. (*Printed.*)

No. 48.. Return to an Address to His Honour the Lieutenant-Governor, of the twentieth day of March, 1891, praying that he will cause to be laid before the House a Return of copies of all correspondence, except that already brought down, between any member or officer of the Government of Ontario, and any member or officer of the Government of the Province of Quebec, with reference to the matters in dispute between the Province of Ontario and the Province of Quebec, or any of such matters, of all

memoranda or documents shewing the propositions made for the settlement of the said matters or any of them. Presented to the Legislature 14th April, 1891. Mr. *H. E. Clarke* (*Toronto.*) (*Printed.*)

No. 49.. Copy of an Order in Council respecting the commutation of fees of His Honour Judge Mosgrove, Junior Judge of the County Court of the County of Carleton, under the provisions of 52 Vic., Cap. 10, Sec. 5. Presented to the Legislature 15th April, 1891. (*Not printed.*)

No. 50.. Report of the Master of Titles for the year 1890. Presented to the Legislature 20th April, 1891. (*Printed.*)

No. 51.. Report of the Commissioners for the Queen Victoria Niagara Falls Park. Presented to the Legislature 28th April, 1891. (*Printed.*)

No. 52.. Report of the Provincial Board of Health for the year 1890. Presented to the Legislature 28th April, 1891. (*Printed.*)

No. 53.. Report of the Secretary and Registrar of the Province for the year 1890. Presented to the Legislature 29th April, 1891. (*Printed.*)

No. 54.. Return to an Order of the House of the thirteenth day of April 1891, for a copy of the Proclamation of the Returning Officer for the Electoral District of Parry Sound appointed to hold the last election of a member to represent the said Electoral District in this House, for holding the Election and fixing the places at which Polls were to be opened for taking the votes of the Electors thereat. A list of the places, if any, not named in the said Proclamation at which Polls were opened. A statement of the number of votes cast at any polling place not mentioned in the said Proclamation, shewing the number of votes cast for each candidate. Copies of the notices, if any, of the opening and holding of such last mentioned Polls, published by the Returning Officer, and a statement of the date and manner of the publication thereof. Presented to the Legislature 29th April, 1891. Mr. *Marter.* (*Not printed.*)

No. 55.. Return to an Address to His Honour the Lieutenant-Governor of the seventeenth day of April, 1891, praying that he will cause to be laid before this House a Return shewing what proceedings have been taken by the Government in investigating the business carried on by the Lion Provident and Life Association, with copies of any Reports or Orders in Council connected therewith. Presented to the Legislature 30th April, 1891. Mr. *Bishop.* (*Not printed.*)

No. 56.. Return to an Order of the House of the twenty-sixth day of February, 1890, for copies of the lease granted to the Keewatin Lumber Company or John R. Mather, of certain lands and islands in or near the Lake of the Woods, in the District of Algoma, and of all other leases granted of lands or islands in the said district prior to the year 1878. Also, shewing the revenue, if any, derived from the lands or islands so leased, or the timber cut therefrom in each year since such leases were made, shewing from whom received and on what account, in so far as the same are shewn in Department of Crown Lands. Also, a copy of the judgment pronounced in the High Court of Justice as to the rights of the said lessees under the said leases. Also, shewing the area of lands so placed under lease. Also, a list of all claims made for locations or mining rights in the territory covered by the said leases, and of the decisions of the Commissioner of Crown Lands thereon. And copies of all correspondence with reference

to the surrender by the lessees, or any of them, of the rights claimed under such leases, or any of such rights. Presented to the Legislature 1st May, 1891. Mr. *Meredith.* (*Not printed.*)

No. 57.. Statement of the Returns forwarded to the office of the Provincial Secretary of all the fees and emoluments received by the Registrars of Ontario for the year 1890, made in accordance with the provisions of R.S.O., 1887, Cap. 114, Sec. 100, with which are contrasted, receipts of the same nature in the years 1888 and 1889. (*Sessional Papers No. 57.*) Presented to the Legislature 1st May, 1891. (*Printed.*)

No. 58.. Report of the Inspector of Legal offices for the year 1890. Presented to the Legislature 1st May, 1891. (*Printed.*)

No. 59.. Return to an Order of the House of the twelfth day of March, 1890, shewing the lots, townships or other area, in the Electoral District of West Algoma, the timber of which has been sold. The dates when the same was sold; the names of the purchasers, and the prices paid. Shewing, also, what timber berths or other territory in the said district have been placed under license, or in respect of which permits to cut timber have been granted under the authority of the Province; the date when first placed under license, or permits first granted; the names of the original licensee or holder of the permit; the name of the present licensee or holder of the permit and the bonus *per* square mile received for each such berth or other territory. Presented to the Legislature 2nd May, 1891. Mr. *Meredith.* (*Not printed.*)

No. 60.. Report of the Inspector of Factories for the year 1890. Presented to the Legislature 2nd May, 1891. (*Printed.*)

No. 61.. Return to an Order of the House of the 29th day of April, 1891, shewing: 1. Total sales effected of Grammar School Lands in the Township of Proton, together with payments made on same from March 6th, 1861, to July 1st, 1867. 2. A statement of what yearly payments have been received from sales of Grammar School Lands in the Township of Proton since July 1st, 1867, and what payments were made by the Government to the Township of Proton as result of the same. Presented to the Legislature 2nd May, 1891. Mr. *McKechnie.* (*Printed.*)

No. 62.. Return to an Order of the House of the 29th day of April, 1891, for copies of any and all resolutions of the Council of the Township of Proton relative to Grammar School Lands situated in that Township, or correspondence of the Council regarding same. Also, copies of all petitions or memorials from ratepayers of the Township of Proton which turn to shew or prove that when they purchased Grammar School Lands from the Government it was with the distinct or implied understanding that one-fourth of the purchase money was to be returned to them, as a fund for public improvements within the Municipality. Also, any and all further correspondence regarding same not already brought down, Also, any correspondence with the late Crown Land Agent at Durham, in connection with the sale of said lands which would tend to prove or allege that a fourth of the purchase money was to be returned to the Municipality to form a fund for public improvements in the Township. Also, any other papers on the subject which have not been already brought down. Also, an account of the sums paid to other townships in respect of Grammar School Lands therein. Presented to the Legislature 2nd May, 1891. Mr. *McKechnie.* (*Printed.*)

No. 63.. Return to an Order of the House of the 29th day of April, 1891, shewing the total collections from Confederation to the 31st day of December, 1890, on Common School Lands, together with the percentage paid to the municipalities on account of the Land Improvement Fund. Presented to the Legislature 2nd May, 1891. Mr. *Gibson* (*Huron.*) (*Printed.*)

No. 64.. Return to an Order of the House of the 29th day of April, 1891, containing the report of a Committee appointed by the Senate of the University of Toronto on the 10th day of January, 1891, and by the Board of Trustees of the same Institution on the 13th day of January, 1891, to report upon the present and prospective revenue and the most urgent pecuniary requirements of the University and of University College and as to the time, mode and order in which these requirements should be dealt with. Presented to the Legislature 2nd May, 1891. Mr. *Balfour.* (*Printed.*)

No. 65.. Return to an Order of the House of the 29th day of April, 1891, for copies of the judgments of Chief Justice Galt quashing the local option liquor by-laws adopted by the municipalities of Oakland, South Norwich and London West, under the authority of Section 18, of Cap. 56, of the Statutes of Ontario, 1890. Presented to the Legislature 2nd May, 1891. Mr. *Allan.* (*Printed.*)

## CONTENTS OF PART VIII.

No. 66.. Report of the Bee-keepers Association for the year 1890. Presented to the Legislature 2nd May, 1891. (*Printed.*)

No. 67.. Report of the Bureau of Industries for the year 1890. Presented to the Legislature 2nd May, 1891. (*Printed.*)

No. 68.. Report of the Inspector of Mines, 1890. Presented to the Legislature 2nd May, 1891. (*Printed.*)

(No. 41).

Analysis of Reports of County and Township Agricultural and Horticultural Societies in Ontario for the year 1889. Presented to the Legislature 6th April, 1891. (*Not Printed*).

(No. 42).

Report of the Inspector of the Elgin House of Industry and Refuge for the year ending 31st October, 1891. Presented to the Legislature 24th March, 1891. (*Not Printed*).

(No. 43).

Copy of an Order in Council respecting the commutation of fees payable under the Surrogates Courts Act to His Honour Judge Toms, Judge of the County Court of the County of Huron. Presented to the Legislature 31st March, 1891. (*Not Printed*).

# STATEMENT

Of Sale of Timber Limits held 1st October, 1890.

Presented to the Legislative Assembly,

By Command,

J. M. GIBSON,
*Provincial Secretary.*

Provincial Secretary's Office,
Toronto, April 2nd, 1891.

STATEMENT of Sale of Timber Limits held 1st October, 1890.

| DISTRICT. | No. of berth. | Area. | Bonus per mile. | Total amount of bonus. |
|---|---|---|---|---|
| | | | $ c. | $ c. |
| Rainy River | 1 | 23 | 1,075 00 | 24,725 00 |
| " | 3 | 10 | 1,000 00 | 10,000 00 |
| " | 4 | 13 | 850 00 | 11,050 00 |
| " | 6 | 35 | 300 00 | 10,500 00 |
| " | 7 | 6 | 1,350 00 | 8,100 00 |
| " | 10 | 3 | 1,000 00 | 3,000 00 |
| " | 12 | 3 | 1,000 00 | 3,000 00 |
| " | 8 | 5 | 550 00 | 2,750 00 |
| " | 9 | 1 | 900 00 | 900 00 |
| " | 19 | 11 | 475 00 | 5,225 00 |
| " | 20 | 5 | 375 00 | 1,875 00 |
| " | 21 | 4 | 425 00 | 1,700 00 |
| " | 25 | 11 | 150 00 | 1,650 00 |
| " | 38 | 14 | 825 00 | 11,550 00 |
| " | 39 | 12 | 725 00 | 8,700 00 |
| Thunder Bay | 2 | 7 | 1,250 00 | 8,750 00 |
| " | 3 | 6¾ | 2,250 00 | 15,187 50 |
| " | 4 | 8¼ | 2,250 00 | 18,562 50 |
| " | 5 | 19½ | 400 00 | 7,800 00 |
| " | 8 | 37½ | 550 00 | 20,625 00 |
| Township of Aweres (Algoma District) | ..... | 18½ | 2,625 00 | 48,562 50 |
| Rainy River | 28 | 6 | 425 00 | 2,550 00 |
| " | 61 | 18 | 550 00 | 9,900 00 |
| " | 62 | 5 | 810 00 | 4,050 00 |
| " | 63 | 2¼ | 375 00 | 843 75 |
| " | 26 | 10 | 1,035 00 | 10,350 00 |
| " | 2 | 4 | 2,450 00 | 9,800 00 |
| " | 5 | 10 | 750 00 | 7,500 00 |
| " | 13 | 7 | 675 00 | 4,725 00 |
| " | 14 | 1 | 700 00 | 700 00 |
| " | 17 | 1 | 700 00 | 700 00 |
| " | 18 | 4 | 900 00 | 3,600 00 |
| " | 29 | 1 | 1,300 00 | 1,300 00 |
| " | 30 | 10 | 700 00 | 7,000 00 |
| " | 31 | 5 | 1,100 00 | 5,500 00 |
| " | 32 | 7 | 300 00 | 2,100 00 |
| " | 33 | 2 | 225 00 | 450 00 |
| " | 34 | 9 | 600 00 | 5,400 00 |
| " | 35 | 4 | 550 00 | 2,200 00 |
| " | 60 | 5 | 275 00 | 1,375 00 |
| Thunder Bay | 1 | 12 | 3,500 00 | 42,000 00 |
| | ..... | 376¾ | ..... | 346,256 25 |

AUBREY WHITE,
Assistant Commissioner.

DEPARTMENT OF CROWN LANDS,
TORONTO, 2nd April, 1891.

# RETURN

To an Order of the Legislative Assembly, passed on the 17th day of February, 1890, for a Return shewing the number of Stationary Steam Engines and Boilers in each of the Municipalities of the Province, and for what purpose used.

J. M. GIBSON,
*Secretary.*

PROVINCIAL SECRETARY'S OFFICE,
TORONTO, April 7th, 1891.

(*Mr. Phelps.*)

# RETURN

Respecting Stationary Boilers and Engines and for what purposes used.

SCHEDULE:—

PAGE.

Abstract shewing total number in use ..... 4
(1) Number in use in each municipality ..... 5
(2) For what purposes used ..... 9

# ABSTRACT

OF RETURNS RECEIVED, SHEWING TOTAL NUMBER OF STATIONARY ENGINES AND BOILERS.

| | Engines. | Boilers. |
|---|---|---|
| 79 Villages | 438 | 469 |
| 59 Towns | 834 | 896 |
| 8 Cities | 583 | 583 |
| 288 Townships | 1,485 | 1,504 |
| Total | 3,340 | 3,452 |

# RETURN

TO AN ORDER DATED THE 17TH FEBRUARY, 1890, SHEWING (1) THE NUMBER OF STATIONARY STEAM ENGINES AND BOILERS IN EACH OF THE MUNICIPALITIES OF THE PROVINCE AND (2) FOR WHAT PURPOSES USED.

(1) Number of Stationary Engines and Boilers in each Municipality.

| Name of Municipality. | No. of Engines and Boilers. | Extra Boilers. | Name of Municipality. | No. of Engines and Boilers. | Extra Boilers. |
|---|---|---|---|---|---|
| Townships— | | | Townships— | | |
| Adolphustown | 2 | .... | Colchester, North | 4 | .... |
| Alnwick | 1 | .... | Collingwood | 3 | .. . |
| Amabel | 11 | .... | Cornwall | 12 | .... |
| Amaranth | 5 | .... | Crosby, North | 8 | .... |
| Amherst Island | 3 | .... | " South | 8 | .... |
| Ancaster | 3 | .... | Cumberland | 4 | .... |
| Anderdon | 7 | .... | | | |
| Anson | 1 | .... | Darling | 1 | .... |
| Arran | 2 | .... | Darlington | 2 | .... |
| Armour | 3 | .... | Dawn | 13 | .... |
| Artemesia | 8 | .... | Derby | 6 | .... |
| Arthur | 2 | .... | Dorchester, North | 8 | .... |
| Ashfield | 4 | .... | " South | 5 | .... |
| Assiginack | 3 | .... | Downie | 9 | .. |
| Athol | 3 | .... | Drummond | 5 | .... |
| Bagot | 3 | .... | Easthope | 9 | .... |
| Barton | 5 | .... | Eastnor | 3 | .... |
| Bayham | 4 | .... | Ekfrid | 9 | .... |
| Beckwith | 3 | .... | Elderslie | 6 | .... |
| Beverly | 10 | .... | Elizabethtown | 14 | .... |
| Bexley | 9 | .... | Ellice | 16 | .... |
| Blandford | 2 | .... | Elma | 13 | .... |
| Brock | 15 | .... | Elmsley, South | 1 | .... |
| Bromley | 2 | .... | Enniskillen | 54 | .... |
| Brudenell | 1 | .... | Eramosa | 8 | .... |
| Burford | 10 | .... | Ernestown | 1 | .... |
| Burpee | 1 | .... | Esquesing | 8 | .... |
| | | | Essa | 6 | .... |
| Cambridge | 4 | .... | Etobicoke | 2 | .... |
| Camden | 3 | .... | Euphemia | 5 | .... |
| Canborough | 4 | .. | Euphrasia | 7 | .... |
| Carden | 1 | .... | Fenelon | 5 | .... |
| Cardiff | 3 | .... | Ferris | 1 | .... |
| Cardwell | 1 | .... | Finch | 5 | .... |
| Carlow | 2 | .... | Fitzroy | 1 | .... |
| Carnarvon | 2 | .... | Flamboro', East | 2 | .... |
| Carradoc | 5 | .... | " West | 9 | .... |
| Carrick | 4 | .... | Flos | 15 | .... |
| Cayuga, North | 4 | .... | Fredericksburg, S. | 2 | .... |
| Chaffey | 4 | 1 | Fullarton | 3 | .... |
| Chapman | 3 | .... | | | |
| Chatham | 11 | .... | Gainsborough | 6 | .... |
| Chinguacousy | 3 | .... | Glenelg | 2 | .... |
| Colchester, South | 5 | .... | Gloucester | 5 | .... |

(1) Number of Stationary Engines, etc.—*Continued.*

| Name of Municipality. | No. of Engines and Boilers. | Extra Boilers. |
|---|---|---|
| Townships— | | |
| Gordon | 3 | .... |
| Grantham | 6 | ... |
| Greenock | 11 | .... |
| Grey | 20 | .... |
| Grimsby, North | 2 | .... |
| Guelph | 4 | .... |
| Gwillimsbury, West | 2 | .... |
| " East | 8 | .... |
| Harwich | 17 | .... |
| Harvey | 2 | .... |
| Hawkesbury, East | 10 | .... |
| " West | 18 | .... |
| Hay | 18 | .... |
| Hibbert | 2 | ... |
| Hilton | 5 | .... |
| Hullet | 5 | .... |
| Humberstone | 13 | .... |
| Hungerford | 9 | ... |
| Huntingdon | 7 | .... |
| Huntley | 2 | .... |
| Innisfil | 3 | .... |
| Keppel | 5 | .... |
| Kincardine | 10 | .... |
| Kitley | 1 | 3 |
| Lanark | 6 | ... |
| Lansdowne (Front) | 2 | .... |
| Leeds (Rear) | 8 | .... |
| Limerick | 3 | .... |
| Lindsay | 3 | .... |
| Lochiel | 7 | .... |
| Liney | 11 | .... |
| Louth | 2 | .... |
| Luther, East | 4 | .... |
| Macaulay | 4 | .... |
| Madoc | 7 | .... |
| Malahide | 10 | .... |
| Mara | 3 | .... |
| Mariposa | 4 | .... |
| Markham | 5 | .... |
| Mamora | 11 | .... |
| Matchedash | 1 | .... |
| Medonte | 12 | .... |
| Melancthon | 12 | .... |
| Mersea | 12 | .... |
| Middleton | 7 | .... |
| Minden | 2 | .... |
| Minto | 5 | .... |
| Monck | 2 | ... |
| Monteagle | 1 | .... |
| Morris | 3 | .... |
| Morrison | 4 | .... |
| Mosa | 6 | .... |
| Mountain | 15 | .... |
| Mulmur | 6 | .... |
| Muskoka | 5 | .... |
| McDougall | 1 | .... |
| McKillop | 5 | ... |
| McLean | 2 | .... |
| McNab | 5 | .... |

| Name of Municipality. | No. of Engines and Boilers. | Extra Boilers. |
|---|---|---|
| Townships— | | |
| Nepean | 5 | .... |
| Niagara | 4 | .... |
| Normanby | 13 | .... |
| Norwich, North | 9 | .... |
| Nassagaweya | 6 | .... |
| Notawassaga | 7 | .... |
| Olden | 1 | .... |
| Oliver | 1 | .... |
| Onondaga | 1 | .... |
| Orford | 11 | .... |
| Orillia | 11 | .... |
| Osgoode | 7 | .... |
| Osnabruck | 19 | .... |
| Oso | 1 | .... |
| Otonabee | 4 | .... |
| Oxford | 8 | .... |
| Oxford, East | 1 | .... |
| " North | 2 | .... |
| " West | 1 | .... |
| Packenham | 1 | .... |
| Pelham | 4 | .... |
| Perry | 4 | .... |
| Pickering | 2 | .... |
| Pittsburgh | 1 | .... |
| Plantagenet, South | 11 | .... |
| Plympton | 10 | .... |
| Plantagenet, North | 7 | .... |
| Peel | 7 | .... |
| Radcliffe | 2 | .... |
| Rainham | 5 | .... |
| Raleigh | 9 | .... |
| Reach | 1 | .... |
| Rochester | 8 | 2 |
| Romney | 5 | .... |
| Ross | 1 | .... |
| Russell | 9 | .... |
| Saltfleet | 4 | |
| Sandwich, East | 18 | .... |
| Sarawak | 2 | .... |
| Saugeen | 3 | .... |
| Scott | 4 | ... |
| Seymour | 1 | 5 |
| Sheffield | 3 | .... |
| Sidney | 20 | .... |
| Snowden | 2 | .... |
| Summerville | 7 | .... |
| Sophiasburg | 2 | .... |
| Springer | 3 | .... |
| Stamford | 3 | .... |
| Stephenson | 3 | .... |
| St. Joseph | 1 | .... |
| Stisted | 2 | .... |
| Storrington | 8 | ... |
| Strong | 4 | .... |
| St. Vincent | 4 | .... |
| Sullivan | 6 | .... |
| Sunnidale | 6 | .... |
| Sydenham | 3 | .... |
| Tay | 18 | .... |
| Tehkumah | 1 | .... |

(1) Number of Stationary Engines, etc.—*Continued*

| Name of Municipality. | No. of Engines and Boilers. | Extra Boilers. |
|---|---|---|
| Townships— | | |
| Thorah | 2 | .... |
| Thurlow | 11 | .... |
| Tilbury, East | 7 | .... |
| " West | 4 | .... |
| Toronto Gore | 1 | .... |
| Townsend | 6 | .... |
| Trafalgar | 7 | .... |
| Tudor | 5 | .... |
| Turnbury | 4 | .... |
| Thedford | 4 | .... |
| Tyendinaga | 7 | .... |
| Vaughan | 3 | .... |
| Vespra | 8 | ... |
| Wallace | 4 | .... |
| Walpole | 10 | .... |
| Walsingham, North | 2 | .... |
| " South | 4 | .... |
| Warwick | 7 | .... |
| Waterloo | 12 | .... |
| Wawanosh, East | 4 | .... |
| " North | 7 | .... |
| Wellesley | 18 | .... |
| Westminster | 10 | .... |
| Whitby | 6 | .... |
| Whitchurch | 4 | .... |
| Wilberforce | 1 | .... |
| Williams, East | 7 | .... |
| " North | 1 | .... |
| Williamsburg | 14 | .... |
| Willoughby | 1 | .... |
| Wilmot | 18 | .... |
| Windham | 9 | .... |
| Yarmouth | 33 | .... |
| Yonge, Front | 15 | .... |
| Zorra, East | 13 | .... |
| Villages— | | |
| Acton | 8 | .... |
| Ailsa Craig | 7 | .... |
| Alvinston | 7 | .... |
| Arkona | 4 | .... |
| Arnprior | 6 | 9 |
| Arthur | 7 | .... |
| Ayr | 7 | .... |
| Bath | 2 | .... |
| Beamsville | 3 | .... |
| Blyth | 7 | .... |
| Brussells | 7 | .... |
| Bolton | 4 | .... |
| Brighton | 1 | .... |
| Caledonia | 4 | .... |
| Cardinal | 2 | 3 |
| Chippawa | 2 | .... |
| Clifford | 8 | .... |
| Clinton | 18 | .... |
| Dundalk | 4 | .... |
| Dunnville | 5 | .... |
| Elora | 4 | .... |
| Embro | 1 | .... |

| Name of Municipality. | No. of Engines and Boilers. | Extra Boilers. |
|---|---|---|
| Villages— | | |
| Erin | 2 | .... |
| Fenelon Falls | 12 | |
| Garden Island | 4 | .... |
| Georgetown | 11 | .... |
| Glencoe | 7 | .... |
| Hagersville | 3 | .... |
| Hawkesbury | 2 | .... |
| Hespeler | 4 | 5 |
| Iroquois | 7 | .... |
| Kemptville | 11 | .... |
| Lakefield | 1 | .... |
| Lanark | 3 | .... |
| Leamington | 6 | .... |
| Markham | 8 | .... |
| Merritton | 1 | 9 |
| Milbrook | 5 | .... |
| Milverton | 7 | .... |
| Markdale | 8 | .... |
| Morrisburg | 6 | .... |
| Newboro' | 2 | .... |
| Newburgh | 4 | 3 |
| New Hamburg | 7 | .... |
| Niagara Falls, South | 1 | .... |
| Norwich | 11 | 1 |
| Norwood | 5 | .... |
| Omemee | 3 | .... |
| Paisley | 11 | .... |
| Point Edward | 4 | .... |
| Port Dalhousie | 4 | .... |
| Port Dover | 3 | .... |
| Port Elgin | 13 | ... |
| Port Perry | 6 | .... |
| Port Stanley | 2 | .... |
| Richmond Hill | 2 | .... |
| Rockland | 19 | .... |
| Shelburne | 10 | .... |
| Smith's Falls | 4 | .... |
| Springfield | 5 | .... |
| Stayner | 5 | .... |
| Stirling | 4 | .... |
| Stouffville | 6 | .... |
| Southampton | 5 | 1 |
| Tara | 4 | .... |
| Thamesville | 6 | .... |
| Thedford | 4 | .... |
| Thornbury | 3 | .... |
| Tiverton | 4 | .... |
| Toronto, East | 2 | .... |
| Wallaceburgh | 12 | 1 |
| Wardsville | 2 | .... |
| Waterdown | 5 | .... |
| Waterford | 7 | .... |

(1) Number of Stationary Engines, etc.—*Continued.*

| Name of Municipality. | No. of Engines and Boilers. | Extra Boilers. |
|---|---|---|
| Villages – | | |
| Winchester, West | 8 | 1 |
| Wiarton | 14 | .... |
| Wroxeter | 6 | .... |
| Towns— | | |
| Amherstburg | 6 | .... |
| Aylmer | 14 | .... |
| Barrie | 18 | 1 |
| Berlin | 33 | .... |
| Blenheim | 10 | .... |
| Bothwell | 4 | .... |
| Bowmanville | 9 | .... |
| Bradford | 3 | .... |
| Brampton | 11 | .... |
| Brockville | 29 | .... |
| Chatham | 33 | .... |
| Cobourg | 14 | .... |
| Collingwood | 20 | 6 |
| Cornwall | 9 | 23 |
| Deseronto | 11 | 19 |
| Dresden | 20 | 3 |
| Forest | 11 | |
| Gravenhurst | 24 | .... |
| Goderich | 19 | 3 |
| Harriston | 15 | .... |
| Ingersoll | 20 | 4 |
| Kincardine | 11 | .... |
| Lindsay | 22 | .... |
| Midland | 12 | .... |
| Mitchell | 15 | .... |
| Meaford | 14 | .... |
| Mount Forest | 8 | .... |
| Napanee | 10 | .... |
| Newmarket | 11 | ... |
| Niagara Falls | 3 | ... |
| Oakville | 9 | .... |
| Towns— | | |
| Orangeville | 18 | .... |
| Orillia | 14 | .... |
| Oshawa | 14 | .... |
| Owen Sound | 24 | .... |
| Paris | 9 | .... |
| Parkhill | 12 | .... |
| Parry Sound | 19 | .... |
| Pembroke | 19 | .... |
| Penetanguishene | 17 | .... |
| Peterborough | 22 | .... |
| Port Arthur | 9 | .... |
| Port Hope | 8 | .... |
| Prescott | 11 | 3 |
| Ridgetown | 11 | .... |
| Sandwich | 2 | .... |
| Sarnia | 28 | .... |
| Seaforth | 14 | .... |
| Simcoe | 12 | .... |
| Strathroy | 10 | .... |
| Thorold | 4 | .... |
| Uxbridge | 13 | .... |
| Watford | 7 | .... |
| Welland | 11 | .... |
| West Toronto Junction | 16 | .... |
| Whitby | 8 | .... |
| Windsor | 33 | .... |
| Cities— | | |
| Brantford | 54 | .. |
| Hamilton | 185 | .... |
| Kingston | 50 | .... |
| London | 94 | .... |
| Ottawa | 42 | .... |
| St. Catharines | 32 | .... |
| St. Thomas | 29 | .... |
| Toronto | 97 | .... |

(2) Stationary Engines and Boilers—For what purposes used.

| — | No. of Engines and Boilers. |
|---|---|
| Agricultural implements | 23 |
| Asphalt works | 1 |
| Basket manufactory | 3 |
| Bee supplies | 1 |
| Bending factory | 3 |
| Bicycle factory | 1 |
| Billiard factory | 2 |
| Biscuit and candy | 8 |
| Blacksmithing | 10 |
| Boiler works | 48 |
| Bolt works | 1 |
| Boots and shoes | 10 |
| Bottle factory | 1 |
| Box factory | 1 |
| Breweries | 28 |
| Brick and tile manufactories | 60 |
| Brush and broom | 7 |
| Buckle factory | 1 |
| Building and jobbing | 13 |
| Butchers' establishments | 5 |
| Butter factories | 2 |
| Button factories | 4 |
| Canning factories | 10 |
| Carriage factories | 33 |
| Cheese factories | 289 |
| Cheese box factories | 4 |
| Chemicals | 2 |
| Chopping grain | 33 |
| Cider and vinegar | 11 |
| Cordage manufactories | 3 |
| Creamery | 1 |
| Crushing gold quartz | 6 |
| Deaf and dumb institute | 5 |
| Derrick | 1 |
| Driving machinery | 111 |
| Dry dock | 1 |
| Dye works | 5 |
| Elastic manufactory | 1 |
| Electric light | 27 |
| Elevating | 38 |
| Fanning mill factory | 6 |
| Faucet manufactory | 1 |
| Feathersbone factory | 1 |
| Felt hat factory | 1 |
| Fence factories | 2 |
| Flax factories | 16 |
| Flour and grist mills | 234 |
| Foundries | 112 |
| Furniture factories | 96 |
| Gas factories | 7 |
| Ginger ale | 1 |
| Glass factory | 1 |
| Glove factory | 1 |
| Glue factory | 1 |
| Gunsmith | 1 |
| Gypsum | 1 |
| Handle manufactory | 1 |
| Hay press | 1 |
| Heating purposes | 55 |
| Hoop and stave factories | 46 |
| Hosiery manufactories | 2 |
| Jail (Toronto) | 2 |
| Jewellery manufactory | 1 |
| Knitting factories | 7 |
| Laundries | 9 |
| Livery stable | 1 |
| Machine shops | 90 |
| Matting works | 5 |
| Manufacturing purposes | 27 |
| Marble works | 3 |
| Mineral waters | 24 |
| Not specified | 264 |
| Oatmeal mills | 7 |
| Oil refineries | 6 |
| Opera house | 1 |
| Pail factories | 2 |
| Paint manufactory | 1 |
| Phosphate | 1 |
| Piano and organ manufactories | 15 |
| Pickle manufactories | 2 |
| Picture frames | 1 |
| Pitch factory | 1 |
| Paper manufactories | 9 |
| Planing mills | 173 |
| Plumbing | 2 |
| Pop manufactory | 1 |
| Pork packing | 5 |
| Printing presses | 54 |
| Provision dealer | 1 |
| Pulp mills | 2 |
| Pump manufactories | 17 |
| Pumping water | 37 |
| Rag shop | 1 |
| Railway shops | 15 |
| Rubber factory | 1 |
| Salt works | 4 |
| Sash and door manufactories | 50 |
| Sausage manufactories | 6 |
| Saw mills | 651 |
| Sawing wood | 42 |
| Saw and axe factories | 10 |
| Shingle mills | 85 |
| Shirt factory | 1 |
| Silver plating | 6 |
| Soap factories | 5 |
| Soda water | 8 |
| Sorgum | 1 |
| Spice mills | 6 |
| Starch factory | 1 |
| Stone crusher | 4 |
| Straw goods | 1 |
| Street railway | 1 |
| Sweepers | 1 |
| Tailor cutting | 2 |
| Tanneries | 62 |
| Terra cotta | 1 |
| Tin stamping | 2 |
| Tobacco manufactory | 1 |
| Trunk factory | 1 |
| Tub factory | 1 |
| Waterworks | 18 |
| Wheel works | 2 |
| Whip factory | 1 |
| Wire works | 1 |
| Woollen and cotton manufactories | 80 |

# RETURN

To an Order of the Legislative Assembly, passed on the 28th day of February, 1890, for a Return shewing, so far as the records of the Crown Lands Department will enable the information to be given, the number, area and location of each timber berth or other territory now under license, the date when such berth or territory was first placed under license, and the name of the original licensee and of the person in whose name such license stood on the first day of January last. Also, shewing the bonus per square mile received for each such limit, and a rough map or plan shewing the area now under license.

J. M. GIBSON,
*Secretary.*

Provincial Secretary's Office,
Toronto, April 8th, 1891.

(*Mr. Meredith.*)

RETURN to an Order of the Legislative Assembly passed on the 28th day of February, 1890, the information to be given, the number, area and location of each timber berth or under license, and the name of the original licensee and of the person in whose per square mile received for each such limit, and a rough map or plan showing

| No. of License, 1889-90. | Area. | Location. | Date first placed under license. | Name of Original Licensee. |
|---|---|---|---|---|
| 1 | 36 | Berth No. 98, N. S. L. H. | 1873-74 | Cook Bros. |
| 2 | 36 | " 99 " | 1873-74 | " " |
| 3 | 36 | " 94 " | 1873-74 | Gibbs & Bro., and Wm. Beatty |
| 4 | 36 | " 102 " | 1873-74 | " " |
| 5 | 36 | " 124 " | 1882-83 | F. Chamberlain |
| 6 | 36 | " 35 " | 1873-74 | Jacob Hespeller |
| 7 | 36 | " 118 " | 1885-86 | Alex. Barnet |
| 8 | 36 | " 43 " | 1873-74 | David Moore |
| 9 | 24 | " 135 " | 1873-74 | John Shedden |
| 10 | 36 | " 106 " | 1873 74 | " |
| 11 | 36 | " 105 " | 1873-74 | " |
| 12 | 36 | " 101 " | 1873-74 | " |
| 13 | 36 | " 100 " | 1873-74 | " |
| 14 | 36 | " 192 " | 1872-73 | S. D. Woodruff |
| 15 | 36 | " 90 " | 1873-74 | H. B. Rathbun & Son |
| 16 | 36 | " 51 " | 1873-74 | David Moore |
| 17 | 68 | " 2, sale of 1885 | 1886-87 | M. Boyd & Co |
| 18 | 26 | " 12 " | 1886-87 | " |
| 19 | 36 | " 38, N. S. L. H. | 1873-74 | Robt. Christie |
| 20 | 36 | " 30 " | 1873-74 | " |
| 21 | 36 | " 46 " | 1873-74 | H. B. Rathbun & Son |
| 22 | 36 | " 64 " | 1873-74 | Jas. McLaren & Co |
| 23 | 36 | " 119 " | 1876-77 | Alex. Prentice |
| 24 | 53 | " 3, sale of 1885 | 1885-86 | Hill & Wells |
| 25 | 36 | " 19 " | 1885-86 | M. Quinn |
| 26 | 36 | " 29, N. S. L. H. | 1873-74 | Robt. Christie |
| 27 | ¼ | Watt | 1889-90 | A. McKinnon |
| 28 | 27 | Berth No. 26, sale of 1885 | 1886-87 | Williams & Murray |
| 29 | 10½ | Blind River, berth No. 2 | 1871-72 | " |
| 30 | 9 | " " 1 | 1871-72 | " |
| 31 | 3¾ | Cobden | 1879-80 | " |
| 32 | 28½ | Striker | 1879-80 | " |
| 33 | 23¾ | Proudfoot, No. 2 | 1884-85 | A. Hill & Co |
| 34 | 3 | Greenock | 1865-66 | Cook & Bros |
| 35 | 8 | Severn Islands | 1860-61 | W. H. Powell |
| 36 | 2 | Islands in River Severn | 1860-61 | " |
| 37 | 58 | Matchedash | 1860-61 | Hall & Edsall Bros. |
| 38 | 18 | Morrison | 1860-61 | Cook Bros. |
| 39 | 6 | Muskoka | 1860-61 | Jno. McGregor |
| 40 | 59¼ | Ryde | 1860-61 | Cook Bros., and A. C. Thomson |
| 41 | 5 | Draper | 1860-61 | G. Cook and J. Cameron |
| 42 | 2 | Vespra | 1860 61 | Cook Bros. |
| 43 | 6 | Tiny | 1860-61 | Jno. Cameron |
| 44 | 5¼ | N. Orillia | 1860 61 | Cook Bros. |
| 45 | 60 | South part of Wood | 1860-61 | A. Heron and A. R. Christie |
| 46 | 53 | Baxter | 1860-61 | " " |
| 47 | 11¾ | Gibson | 1860-61 | " " |
| 48 | 100 | Harrison | 1860-61 | " " |
| 49 | 90 | Burton | 1860-61 | " " |
| 50 | 78 | Brown | 1860-61 | " " |

NOTE.—N. S. L. H. means

for a return shewing, so far as the records of the Department of Crown Lands will enable other territory now under license, the date when such berth or territory was first placed name such license stood on the first day of January, 1890; also showing the bonus the area now under license.

| Licensee on 1st January, 1890. | Bonus per square mile. | Remarks. |
|---|---|---|
| | $ c. | |
| Comstock Bros | 275 00 | |
| " | 295 00 | |
| " | 45 00 | |
| " | 40 00 | |
| R. A. Alger | 150 00 | |
| John Brown | 40 00 | |
| The Cutter & Savidge Lumber Co | 85 00 | |
| H. P. DeGraaf | 45 00 | |
| Woods & Park | 100 00 | |
| " | 85 00 | |
| " | 100 00 | |
| " | 65 00 | |
| " | 130 00 | |
| " | 195 00 | |
| Wiggins & Howry | 160 00 | |
| G. W. Stout | 60 00 | |
| M. Boyd & Co | 1,250 00 | |
| " | 710 00 | |
| Hay & Davidson | 80 00 | |
| " | 45 00 | |
| Emery Bros. | 60 00 | |
| Bank of Toronto | 65 00 | |
| Stephen Baldwin | 85 00 | |
| Hill & Wells | 250 00 | |
| M. Quinn | 100 00 | |
| Hay & Davidson | 45 00 | |
| A. McKinnon | 12 00 | |
| Peter Murray | 100 00 | |
| " | 25 00 | |
| " | 25 00 | |
| " | 40 00 | |
| " | 40 00 | |
| Bank of Toronto | 780 00 | |
| Henry Cargill | ..... | |
| The Georgian Bay Con. Lumber Co | 50 | |
| " " | 50 | |
| " " | 50 | |
| " " | 50 | |
| " " | 50 | |
| " " | 50 | |
| " " | 50 | |
| " " | 50 | |
| " " | 50 | |
| " " | 50 | |
| " " | 50 | |
| " " | 50 | |
| " " | 50 | |
| " " | 50 | |
| " " | 50 | |
| " " | 50 | |

North Shore of Lake Huron.

RETURN to an Order of the Legislative Assembly passed on the 28th day of February, territory now under

| No. of License, 1889-90. | Area. | Location. | Date first placed under license. | Name of Original Licensee. |
|---|---|---|---|---|
| 51 | 118 | Wallbridge | 1863-64 | A. Kennedy |
| 52 | 78½ | McKenzie | 1863-64 | Cockburn & Son |
| 53 | 78 | Ferrie | 1868-69 | Dodge & Co |
| 54 | 36 | Berth No. 60, N. S. L. H | 1881-82 | T. W. Buck |
| 55 | 36 | " 44, " | 1881-82 | " |
| 56 | 36 | " 61, " | 1882-83 | Maganetawan Lumber Co |
| 57 | 36 | " 45, " | 1872-73 | Donald C. Thomson |
| 58 | 36 | " 82, " | 1872-73 | " |
| 59 | 29 | Hagerman, No. 2 | 1871-72 | A. G. P. Dodge |
| | | " 4 | 1871-72 | " |
| 60 | 12 | " 3 | 1871-72 | " |
| 61 | 78½ | Wilson | 1864-65 | Dodge & Co |
| 62 | 76 | Chapman | 1868-69 | " |
| 63 | 78 | Croft | 1868-69 | " |
| 64 | 56 | Ryerson | 1868-69 | " |
| 65 | 13¼ | Conger | 1866-67 | J. & W. Beatty & Co |
| 66 | 18¾ | Part of Freeman | 1866-67 | " " |
| 67 | 17¾ | Perry, No. 3 | 1877-78 | Boyd, Caldwell & Son |
| 68 | 10½ | McMurrich, No. 3 | 1877-78 | McArthur Bros |
| 69 | 36 | Berth No. 168, N. S. L. H | 1882-83 | D'Arcy Boulton |
| 70 | 19 | Patterson, No. 2 | 1881-82 | McArthur Bros |
| 71 | 36 | Berth No. 169, N. S. L. H | 1872-73 | Richard Nagle |
| 72 | 17 | Mills, No. 4 | 1881-82 | Evans & Killmaster |
| 73 | 15¼ | Proudfoot, " 3 | 1881-82 | S. S. Cook |
| 74 | 22 | McConkey, " 3 | 1882-83 | M. Boyd |
| 75 | 18 | Mills, " 3 | 1882-83 | " |
| 76 | 21 | Machar, " 2 | 1884-85 | R. C. Smith |
| 77 | 17¾ | Laurier, " 1 | 1882-83 | Ross & Co |
| 78 | 35 | Berth No. 187, N. S. L. H | 1873-74 | Jas. G. Ross |
| 79 | 36 | " 148, " | 1873-74 | Price, McGinnis, Brown & Gibbon |
| 80 | 24¾ | Pringle, No. 1 | 1881-82 | McArthur Bros |
| 81 | 13¼ | Strong, " 2 | 1881-82 | " |
| 82 | 10 | " " 4 | 1881-82 | " |
| 83 | 36 | Berth No. 53, N. S. L. H | 1873-74 | Jas. G. Ross |
| 84 | 36 | " 176, " | 1872-73 | Gibbs & Bro., and Wm. Beatty |
| 85 | 36 | " 182, " | 1872-73 | " " |
| 86 | 17¾ | Hardy, No. 1 | 1881-82 | Alex. Buist |
| 87 | 15½ | " " 2 | 1883-84 | T. W. Harvey |
| 88 | 22 | " " 4 | 1883-84 | " |
| 89 | 22 | Chisholm, " 1 | 1888-89 | Dominion Bank |
| 90 | 20¾ | Biggar, " 1 | 1887-88 | Jno. G. Bryson |
| 91 | 48¾ | Moncrieff & Hess | 1888-89 | Rinaldo McConnell |
| 92 | 10¼ | Oakley | 1866-67 | H. W. Sage & Co |
| 93 | 24¾ | Joly, No. 2 | 1882-83 | James G. Ross |
| 94 | 36 | Berth No. 113, N. S. L. H | 1873-74 | " |
| 95 | 9 | McMurrich, No. 4 | 1878-79 | S. S. Cook |
| 96 | 27 | Snider | 1872-73 | T. W. McMurray |
| 97 | 36 | Berth No. 54, N. S. L. H | 1873-74 | Cook Bros |
| 98 | 36 | " 93, " | 1873-74 | " |
| 99 | 36 | " 163, " | 1872-73 | Gibbs & Bro., and Wm. Beatty |
| 100 | 28 | " 11, sale of 1885 | 1885-86 | J. & T. Charlton |
| 101 | 36 | " 20, " | 1885-86 | " |
| 102 | 36 | " 112, N. S. L. H | 1872-73 | W. Dyment |
| 103 | 36 | " 3, " | 1873-74 | Wm. McKay |
| 104 | 34 | Springer | 1873-74 | Wm. Mackay |
| 105 | 36 | Berth No. 15, N. S. L. H | 1872-73 | Jas. G. Ross |
| 106 | 36 | " 31, " | 1872-73 | " |
| 107 | 36 | " 39, " | 1872-73 | " |
| 108 | 12¼ | Proudfoot, Berth No. 4 | 1881-82 | F. B. Maxwell |
| 109 | 29 | Cardwell, " 3 & 5 | 1871-72 | Cook Bros |

1890, for a return showing the number, area and location of each timber berth or other license, etc.—*Continued.*

| Licensee on 1st January, 1890. | Bonus per square mile. | Remarks. |
|---|---|---|
| | $ c. | |
| Georgian Bay Con. Lumber Co | 50 | |
| " " | 50 | |
| " " | 50 | |
| " " | 45 | |
| " " | 85 00 | |
| " " | 100 00 | |
| " " | 90 00 | |
| " " | 60 00 | |
| " " | 130 00 | |
| " " | 110 00 | |
| " " | 115 00 | |
| " " | 50 | |
| " " | 50 | |
| " " | 50 | |
| " " | 50 | |
| " " | 50 | |
| " " | 50 | |
| The McArthur Bros. Co. (Ltd) | 130 00 | |
| " " | 310 00 | |
| Geo. B. Burland | 165 00 | |
| C. Beck | 1,120 00 | |
| Gilchrist, *et. al* | 55 00 | |
| H. M. Loud | 120 00 | |
| F. B. Maxwell | 480 00 | |
| Moore Lumber Co | 550 00 | |
| " | 1,410 00 | |
| The McArthur Bros. Co. (Ltd) | 210 00 | |
| " " | 260 00 | |
| " " | 355 00 | |
| " " | 120 00 | |
| " " | 160 00 | |
| " " | 880 00 | |
| " " | 1,110 00 | |
| " " | 430 00 | |
| John F. Eddy, *et. al* | 60 00 | |
| " | 45 00 | |
| C. W. Richardson, *et. al* | 570 00 | |
| " | 530 00 | |
| " | 530 00 | |
| Traders' Bank | 3,000 00 | |
| Bryson Bros | 3,100 00 | |
| Rinaldo McConnell | 184 93 | |
| A. McPherson | 145 00 | |
| Wm. Caldwell | 460 00 | |
| " | 50 00 | |
| John A. Strathy | 110 00 | |
| Wheelihan, *et. al* | 50 00 | |
| Balfour & Menzies | 130 00 | |
| " | 85 00 | |
| J. & W. Charlton | 55 00 | |
| J. & T. Charlton | 710 00 | |
| " | 400 00 | |
| C. Beck & Co | 100 00 | |
| David Moore | 120 00 | |
| " | 101 00 | |
| " | 140 00 | |
| John Hoskin | 80 00 | |
| " | 50 00 | |
| " | 555 00 | |
| " | 175 00 | |

RETURN to an Order of the Legislative Assembly passed on the 28th day of February, territory now under

| No. of License, 1889-90. | Area. | Location. | Date first placed under license. | Name of Original Licensee. |
|---|---|---|---|---|
| 110 | 10 | Cardwell, Berth No. 4 | 1871-72 | Jas. Metcalf |
| 111 | 18¾ | Sinclair, " 2 | 1882-83 | Ross & Co |
| 112 | 21¼ | McMurrich, " 2 | 1877-78 | McArthur Bros |
| 113 | 13¼ | Franklin, " 2 | 1877-78 | Boyd, Caldwell & Son |
| 114 | 10 | " " 1 | 1877-78 | " " |
| 115 | 14¾ | " " 3 | 1880-81 | Mrs. Louisa Cook |
| 116 | 35 | Wood, North part | 1868-69 | Louis Hotchkiss |
| 117 | 47 | Medora | 1868-69 | " |
| 118 | 81 | Muskoka River | 1868-69 | " |
| 119 | 70¼ | Gibson | 1868-69 | " |
| 120 | ¼ | Macaulay | 1885-86 | Thomson & Baker |
| 121 | 30 | Louise | 1873-74 | Cook Bros |
| 122 | 1 | Rutherford | 1882-83 | D. Cameron |
| 123 | 20 | Berth No. 69, N. S. L. H. | 1873-74 | H. B. Rathbun & Son |
| 124 | 36 | " 123, " | 1872-73 | John Chaffey |
| 125 | 36 | " 129, " | 1872-73 | " |
| 126 | 36 | " 130, " | 1872-73 | " |
| 127 | 279 | Baldwin, etc | 1864-65 | John Cameron |
| 128 | 19¼ | Ballantyne, No. 3 | 1888-89 | Riopelle & Smith |
| 129 | 36 | Berth No. 32, N. S. L. H. | 1872-73 | Alex. Sutherland |
| 130 | 36 | " 78, " | 1873-73 | Shirley & Smith |
| 131 | 36 | " 24, " | 1872-73 | Alex. Sutherland |
| 132 | 32¾ | McKim | 1873-74 | Jas. McLaren & Co |
| 133 | 7 | Patton & Thompson | 1868-69 | Nicholson & Laugan |
| 134 | 27½ | Part of Thompson | 1872-73 | Hillman & Collins |
| 135 | 23 | Bright | 1872-73 | " |
| 136 | 12 | Bright Additional | 1872-73 | " |
| 137 | 19 | Laurier, Berth No. 3 | 1881-82 | Wm. Mackay |
| 138 | 25½ | Gurd, " 2 | 1882-83 | W. & W. Kidd |
| 139 | 22 | Himsworth, " 2 | 1882-83 | David Moore |
| 140 | 18 | Machar, " 3 | 1881-82 | Malcolm McDougall |
| 141 | 16 | Himsworth, " 3 | 1881-82 | S. R. Booth |
| 142 | 21¾ | Patterson, " 3 | 1882-83 | Mossom Boyd |
| 143 | 13¼ | Gurd, " 4 | 1882-83 | " |
| 144 | 18¼ | Nipissing, " 4 | 1882-83 | " |
| 145 | 18½ | Machar, " 1 | 1882-83 | J. A. Barron |
| 146 | 18¼ | Joly, " 3 | 1882-83 | H. M. McLean & Co |
| 147 | 14 | " " 4 | 1883-84 | " |
| 148 | 17 | Nipissing, " 3 | 1881-82 | Barnet & Mackie |
| 149 | 1¾ | Himsworth, " 4 | 1881-82 | " |
| 150 | 18 | Nipissing, " 2 | 1881-82 | T. & C. Smith |
| 151 | 36 | Berth No. 95, N. S. H. L. | 1872-73 | Sherman & Fitzgibbon |
| 152 | 36 | Field | 1872-73 | McMurray & Wilson |
| 153 | 36 | Berth No. 21, sale of 1885 | 1885-86 | Barnet & Mackie |
| 154 | 29 | Springer & Caldwell<br>Berth No. 1, sale of 1885 | 1885-86 | " |
| 155 | 36 | " 7, N. S. L. H. | 1873-74 | James G. Ross |
| 156 | 36 | " 8, " | 1873-74 | " |
| 157 | 36 | " 16, " | 1873-74 | " |
| 158 | 36 | " 37, " | 1872-73 | " |
| 159 | 36 | " 22, " | 1879 80 | Thistle, Carswell & Co |
| 160 | 11¼ | Biggar, No. 2 | 1888-89 | Booth & Hale |
| 161 | 17¾ | Wilkes, " 3 | 1888-89 | " |
| 162 | 15½ | Ridout | 1869-70 | Cook Bros |
| 163 | 20 | Hindon | 1868-69 | George Hilliard |
| 164 | 36 | Berth No. 160, N. S. L. H. | 1872-73 | Burton Bros. & Clarke |
| 165 | 32 | " 173, " | 1872-73 | " " |
| 166 | 36 | " 181, " | 1872-73 | Thomson & Maxwell |
| 167 | 7¾ | Chaffey, No. 2 | 1871-72 | James Metcalfe |
| 168 | 8 | McMurrich, " 1 | 1878-79 | S. S. Cook |
| 169 | 36 | Berth No. 47, N. S. L. H. | 1882-83 | Bank of Toronto |

1890, for a Return shewing the number, area and location of each timber berth or other license, etc.—*Continued.*

| Licensee on 1st January, 1890. | Bonus per square mile. | Remarks. |
|---|---|---|
| | $ c. | |
| John Hoskin | 225 00 | |
| " | 300 00 | |
| " | 190 00 | |
| Muskoka Mill & Lumber Co | 500 00 | |
| " " | 280 00 | |
| " " | 280 00 | |
| " " | 50 | |
| " " | 50 | |
| " " | 50 | |
| " " | 50 | |
| " " | 12 00 | |
| James McLaren | 65 00 | |
| D. Cameron | 12 00 | |
| Estate of late R. C. Smith | 135 00 | |
| Spanish River Lumber Co | 115 00 | |
| " " | 155 00 | |
| " " | 240 00 | |
| " " | 50 | |
| Riopelle & Smith | 2,600 00 | |
| C. J. Smith | 65 00 | |
| " | 55 00 | |
| John R. Booth | 80 00 | |
| R. B. Angus | 65 00 | |
| " | 4 00 | |
| " | 55 00 | |
| " | 125 00 | |
| " | 125 00 | |
| J. R. Booth | 130 00 | |
| " | 150 00 | |
| " | 760 60 | |
| " | 210 00 | |
| " | 1,110 00 | |
| " | 860 00 | |
| " | 510 00 | |
| " | 1,540 00 | |
| " | 620 00 | |
| " | 1,200 00 | |
| " | 580 00 | |
| " | 250 00 | |
| " | 240 00 | |
| " | 160 00 | |
| Hale & Booth | 35 00 | |
| Barnet & Mackie | 160 00 | |
| " | 210 00 | |
| " | 250 00 | |
| " | 165 00 | |
| " | 185 00 | |
| " | 155 00 | |
| John Hoskin | 90 00 | |
| Booth & Hale | 65 00 | |
| " | 3,100 00 | |
| " | 4,000 00 | |
| Barrie Lumber Co | 167 00 | |
| " | 198 00 | |
| S. G. M. Gates | 70 00 | |
| " | 55 00 | |
| " | 65 00 | |
| Albert Heath | 500 00 | |
| Heath, Tait & Turnbull | 180 00 | |
| Robt. Gorman | 55 00 | |

RETURN to an Order of the Legislative Assembly passed on the 28th day of February, territory now under

| No. of License, 1889-90. | Area. | Location. | Date first placed under license. | Name of Original Licensee. |
|---|---|---|---|---|
| 170 | 36 | Berth No. 11, N.S.L.H | 1873-74 | Jas. G. Ross |
| 171 | 7 | Stephenson | 1871-72 | A. G. P. Dodge |
| 172 | 36 | Wells | 1873-74 | James G. Ross |
| 173 | 11 | Sherbourne | 1869-70 | Cook Bros. |
| 174 | 8 | " | 1869-70 | Thomson Smith |
| 175 | 26 | Part of Ridout | 1869-70 | " |
| 176 | 14 | Stisted | 1871-72 | William Doran |
| 177 | 1¼ | Livingstone | 1884-85 | Jno. Ludgate |
| 178 | 2 | McClintock | 1886-87 | Bank of Toronto |
| 179 | 3 | Draper | 1871-72 | A. G. P. Dodge |
| 180 | 25¾ | Livingstone, No. 4 | 1888-89 | Mickle, Dyment & Son |
| | | " 6 | 1888-89 | " |
| | | " 7 | 1888-89 | " |
| 181 | 12½ | Laurier, No. 4 | 1881-82 | Wm. McKay |
| 182 | 22½ | " 2 | 1881-82 | " |
| 183 | 36 | Berth No. 23, N.S.L.H | 1873-74 | David Moore |
| 184 | 22 | Ridout | 1869-70 | Thomson Smith |
| 185 | 16 | Hindon | 1868-69 | Geo. Hilliard |
| 186 | 34 | " | 1869-70 | David Thurston |
| 187 | 35½ | Oakley | 1869-70 | H. W. Sage & Co |
| 188 | 27 | Berth No. 68, N.S.L.H | 1873-74 | Cook Bros. |
| 189 | 3½ | Macaulay | 1871-72 | A. G. P. Dodge |
| 190 | 17¼ | Watt | 1871-72 | Cook Bros. |
| 191 | 2¾ | Brunel | 1871-72 | " |
| 192 | 10 | Chaffey, No. 113 | 1872-73 | " |
| 193 | 59 | Berth No. 5, sale of 1885 | 1888-89 | Burton & Bro |
| 194 | 23½ | Bethune, No. 1 | 1881-82 | S. S. Cook |
| 195 | 14 | Sinclair, " 4 | 1881-82 | McArthur Bros |
| 196 | 36 | Berth No. 205, N.S.L.H | 1873-14 | Cook Bros. and McArthur Bros |
| 197 | 36 | " 111, " | 1873-74 | " " |
| 198 | 36 | " 117, " | 1873-74 | " " |
| 199 | 36 | " 125, " | 1873-74 | " " |
| 200 | 36 | " 156, " | 1873-74 | " " |
| 201 | 36 | " 157, " | 1873-74 | " " |
| 202 | 36 | " 162, " | 1873-74 | " " |
| 203 | 36 | " 167, " | 1873-74 | " " |
| 204 | 36 | " 175, " | 1873-74 | " " |
| 205 | 36 | " 180, " | 1873-74 | " " |
| 206 | 36 | " 131, " | 1873-74 | " " |
| 207 | 36 | " 132, " | 1873-74 | " " |
| 208 | 36 | " 138, " | 1873-74 | " " |
| 209 | 36 | " 142, " | 1873-74 | " " |
| 210 | 36 | " 143, " | 1873-74 | " " |
| 211 | 36 | " 149, " | 1873-74 | " " |
| 212 | 36 | " 161, " | 1873-74 | " " |
| 213 | 36 | " 166, " | 1873-74 | " " |
| 214 | 36 | " 194, " | 1873-74 | " " |
| 215 | 36 | " 25, sale of 1885 | 1885-86 | Cook Bros. |
| 216 | 25½ | " 27, " | 1885-86 | " |
| 217 | 36 | " 40, N.S.L.H | 1873-74 | H. B. Rathbun & Son |
| 218 | 18 | South half of Berth No. 41 | 1877-78 | Thos. McCracken |
| 219 | 18 | " " 49 | 1877-78 | " |
| 220 | 33 | Berth No. 128, N. S. L. H | 1876-77 | Alex. Prentice |
| 221 | 36 | " 136, " | 1876-77 | " |
| 222 | 36 | " 193, " | 1873-74 | James G. Ross |
| 223 | 36 | " 200, " | 1873-74 | Richard Nagle |
| 224 | 36 | " 6, " | 1873-74 | James G. Ross |
| 225 | ¼ | Carden | 1887-88 | Alex. J. McDonald |
| 226 | 8 | Livingstone, No. 1 | 1888-89 | Gilchrist, Culligan & Montrose |
| 227 | 14 | Sinclair, No. 3 | 1881-82 | S. S. Cook |
| 228 | 17¼ | Bethune, No. 2 | 1881-82 | " |

1890, for a Return shewing the number, area and location of each timber berth or other license, etc.—*Continued.*

| Licensee on 1st January, 1890. | Bonus per square mile. | Remarks. |
|---|---|---|
| | $ c. | |
| H. V. Noel | 155 00 | |
| Robert Jenkins | 180 00 | |
| Klock Bros | 205 00 | |
| Mickle, Dyment & Son | 125 00 | |
| " | 418 73 | |
| " | 167 22 | |
| " | 100 00 | |
| " | .... ..... | As an equivalent for area taken from their limits. |
| " | ..... | |
| " | 260 00 | |
| " | 2,100 00 | |
| " | 800 00 | |
| " | 1,350 00 | |
| John McKay | 110 00 | |
| " | 200 00 | |
| H. V. Noel | 55 00 | |
| John Hoskin | 418 73 | |
| " | 280 00 | |
| " | 138 00 | |
| " | 142 94 | |
| Balfour & Menzies | 45 00 | |
| Mickle, Dyment & Son | 111 00 | |
| " | 165 00 | |
| " | 313 63 | |
| " | 390 00 | |
| Burton & Bro | 350 00 | |
| Bank of Toronto, *et. al* | 340 00 | |
| " | 810 00 | |
| Cook Bros | 320 00 | |
| " | 175 00 | |
| " | 130 00 | |
| " | 160 00 | |
| " | 120 00 | |
| " | 75 00 | |
| " | 185 00 | |
| " | 155 00 | |
| " | 185 00 | |
| " | 205 00 | |
| " | 185 00 | |
| " | 90 00 | |
| " | 175 00 | |
| " | 95 00 | |
| " | 150 00 | |
| " | 205 00 | |
| " | 140 00 | |
| " | 105 00 | |
| " | 80 00 | |
| " | 260 00 | |
| " | 225 00 | |
| J. J. Smith | 60 00 | |
| Georgian Bay Con. Lumber Co | ..... | To the heirs of James McCracken in compensation for other territory, O. C. 5 April, 1876. |
| " | ..... | |
| Bank of Toronto | 110 00 | |
| " | 140 00 | |
| Canadian Bank of Commerce | 270 00 | |
| " | 50 00 | |
| Bryson & McCormack | 150 00 | |
| Alex. J. McDonald | 12 00 | |
| Gilchrist, *et al* | 6,300 00 | |
| M. Brennen & Sons Manufacturing Co | 1,060 00 | |
| " " " | 800 00 | |

RETURN to an Order of the Legislative Assembly passed on the 28th day of February, territory now under

| No. of License, 1889-90. | Area. | Location. | Date first placed under license. | Name of Original Licensee. |
|---|---|---|---|---|
| 229 | ¼ | McLean | 1889-90 | Thomson & Baker |
| 230 | 21 | Berth No. 198, N. S. L. H. | 1873-74 | Samuel Devereaux |
| 231 | 15 | " 191, " | 1873-74 | Cook Bros. |
| 232 | 36 | " 174, " | 1882-83 | Burton Bros. |
| 233 | 36 | " 199, " | 1873-74 | John Laurie |
| 234 | 35 | " 179, " | 1873-74 | Jas. G. Ross |
| 235 | 36 | " 204, " | 1872-73 | W. Dyment |
| 236 | 36 | " 56, " | 1873-74 | Jas. McLaren & Co |
| 237 | 36 | " 48, " | 1873-74 | " |
| 238 | 12¼ | Brunel | 1871-72 | Cook Bros. |
| 239 | 24¾ | Long—No. 14, sale of 1885 | 1885-86 | J. S. Smithson |
| 240 | 4 | Monck | 1866-67 | John Cook |
| 241 | 20½ | Humphrey, Nos. 1 and 2 | 1871-72 | Cook Bros. |
| 242 | 12¾ | Cardwell | 1882-83 | Woodstock Lumber Co. |
| 243 | 2 | Sandy Island | 1889-90 | Bank of Toronto |
| 244 | ½ | McLean | 1880-81 | Thos. McDermott |
| 245 | 16¾ | Sinclair, No. 1 | 1881-82 | J. Henderson |
| 246 | 22¼ | Ballantyne, " 1 | 1889-90 | Albert Pack, *et al* |
| 247 | 13¼ | Livingstone, " 2 | 1889-90 | " |
| 248 | 84 | Carlyle & Goschen | 1868-69 | G. W. Lee |
| 249 | 27 | Township, East of Goschen | 1872-73 | " |
| 250 | 13½ | North half of Humboldt | 1876-77 | A. R. Schulenburg |
| 251 | 11 | Philip Edward Island | 1885-86 | Collin's Inlet Lumber Company |
| 252 | 36 | Berth No. 59, N. S. L. H. | 1873-74 | A. McRae |
| 253 | ¼ | Rutherford | 1888-89 | P. R. DeLamorandière |
| 254 | 36 | Berth No. 137, N. S. L. H. | 1876-77 | Alex. Prentice |
| 255 | 36 | " 92, " | 1873-74 | Scarth Bros |
| 256 | 36 | " 85, " | 1882-83 | J. C. Miller |
| 257 | ¾ | Foley | 1881-82 | A. Gough |
| 258 | 29 | Christie, Nos. 3 and 4 | 1871-72 | McArthur Bros. |
| 259 | 24¼ | McKellar, Nos. 1 and 2 | 1871-72 | Cook Bros |
| 260 | 33 | Ferguson, Nos. 2, 3, 4 | 1871-72 | A. G. P. Dodge |
| 261 | 41¾ | McDougall | 1864-65 | J. & W. Beatty & Co |
| 262 | 21 | Foley | 1864-65 | " |
| 263 | 11¼ | Shawanaga, No. 3 | 1877-78 | D. F. Wright |
| 264 | 77¼ | Carling | 1864-65 | J. & W. Beatty |
| 265 | 21 | Monteith | 1879-80 | Malcolm McDougall |
| 266 | 2 | Foley | 1879-80 | J. C. Miller |
| 267 | 9¾ | Shawanaga, No. 4 | 1879-80 | Ontario Bank |
| 268 | 47½ | Monteith, Nos. 2, 3, 4 | 1879-80 | " |
| 269 | 9 | Humphrey, No. 3 | 1871-72 | Cook Bros. |
| 270 | 2½ | Monteith | 1872-73 | Firstbrook & Stewart |
| 271 | 35 | Christie, Nos. 1 and 2 | 1871-72 | Cook Bros. |
| 272 | 79 | Spence | 1868-69 | Dodge & Co. |
| 273 | 13 | Ferguson, No. 1 | 1871-72 | H. B. Rathbun & Son |
| 274 | 16 | McKellar, " 3 | 1871-72 | " |
| 275 | 18 | Hagerman, " 1 | 1871-72 | " |
| 276 | 22 | South part of East part of Conger | 1880-81 | British Canadian Lumber Co. |
| 277 | 9 | West " " | 1877-78 | Parry Sound Lumber Co. |
| 278 | 22 | Cowper | 1864-65 | J. & W. Beatty |
| 279 | 23½ | Centre part of Conger | 1866-67 | J. & W. Beatty & Co |
| 280 | 12¼ | Ballantyne, No. 4 | 1887-88 | Wm. Mackay |
| 281 | ½ | Pentland | 1888-89 | " |
| 282 | 13¾ | Wilkes, No. 1 | 1888-89 | " |
| 283 | 15½ | " 2 | 1888-89 | " |
| 284 | 4 | Chaffey | 1880-81 | J. M. Dollar |
| 285 | 21¼ | Stisted | 1880-81 | " |
| 286 | 41¾ | Patterson, No. 1 | 1884-85 | A. Hill |
| 287 | 3½ | Chaffey, No. 3 | 1871-72 | Cook Bros. |

1890, for a Return shewing the number, area and location of each timber berth or other license, etc.—*Continued.*

| Licensee on 1st January, 1890. | Bonus per square mile. | Remarks. |
|---|---|---|
| | $ c. | |
| Thomson & Baker | 12 00 | |
| W. Dyment | 270 00 | |
| " | 1,000 00 | |
| " | 195 00 | |
| " | 50 00 | |
| " | 205 00 | |
| " | 105 00 | |
| Bank of Toronto | 85 00 | |
| " | 200 00 | |
| " | 312 00 | |
| S. Read & Moore | 320 00 | |
| Jas. Dollar | 59 00 | |
| Fuller & Groff | 418 00 | |
| " | 118 82 | |
| Bank of Toronto | 4,105 00 | Sandy Island, Lake Nipissing. |
| J. B. Tait | 12 00 | |
| Jno. A. Strathy | 250 00 | |
| A. Pack, *et al* | 5,500 00 | |
| " | 4,200 00 | |
| Collin's Inlet Lumber Co | 50 | |
| " | 20 00 | |
| " | 40 00 | |
| " | 480 00 | |
| " | 35 00 | |
| P. R. De Lamorandière | 12 00 | |
| Bank of Toronto | 110 00 | |
| " | 175 00 | |
| " | 60 00 | |
| J. C. Miller | 40 00 | |
| Ontario Bank | 310 00 | |
| " | 321 00 | |
| " | 225 00 | |
| " | 50 | |
| " | 50 | |
| " | 100 00 | |
| " | 50 | |
| Parry Sound Lumber Co | 140 00 | |
| " | 40 00 | |
| Ontario Bank | 110 00 | |
| " | 197 00 | |
| " | 210 00 | |
| " | 241 00 | |
| " | 176 00 | |
| " | 50 | |
| " | 140 00 | |
| " | 250 00 | |
| " | 175 00 | |
| Bank of Toronto | 310 00 | |
| " | ..... | As an equivalent for deficiency in their Moon River limit. |
| " | 50 | |
| " | 50 | |
| Wm. Mackay | 850 00 | |
| " | 400 00 | |
| " | 900 00 | |
| " | 1,700 00 | |
| Whaley Lumber Co | 87 00 | |
| " | 51 00 | |
| German Bank of Buffalo | 710 00 | |
| Thos. Whaley | 415 00 | |

BELLEVILLE

RETURN to an Order of the Legislative Assembly passed on the 28th day of February, territory now under

| No. of License, 1889-90. | Area. | Location. | Date first placed under license. | Name of Original Licensee. |
|---|---|---|---|---|
| 1 | 16¾ | Harvey | 1855-56 | Jno. Langton |
| 2 | 16½ | Glamorgan | 1863-64 | Mossom Boyd |
| 3 | 24¾ | Monmouth | 1863-64 | " |
| 4 | 45¼ | Snowden | 1862-63 | " |
| 5 | 7 | Harvey | 1862-63 | Jno. Langton |
| 6 | 24¾ | Glamorgan | 1863-64 | Jno. R. Rodgers |
| 7 | 10¼ | Sherbourne, West part, No. 2 | 1868-69 | Ross & Co. |
| 8 | 57¼ | Cavendish | 1862-63 | Platt & Bissonnette |
| 9 | 44½ | Anstruther | 1862-63 | R. H. Scott |
| 10 | 6 | Harvey | 1862-63 | Anderson & Paradis |
| 11 | 10½ | Burleigh, W. D. | 1866 67 | Shaw & Wait |
| 12 | 8½ | Cavendish | 1867-68 | Strickland Bros. |
| 13 | 1 | Galway | 1870-71 | Matthew Thompson |
| 14 | 17¾ | Anstruther | 1867 68 | A. H. Campbell |
| 15 | 4¼ | Chandos | 1864-65 | J. C. Hughson |
| 16 | 28 | Cardiff | 1863-64 | Sanford Baker |
| 17 | 16¾ | Monmouth | 1863-64 | J. C. Hnghson |
| 18 | 2¾ | " | 1863-64 | Jno. R. Rodgers |
| 19 | 16¼ | Minden | 1866-67 | R. C. Smith |
| 20 | 4¾ | Stanhope | 1862-63 | S. Dickson |
| 21 | 5½ | Lutterworth | 1862-63 | R. H. Scott |
| 22 | 16¼ | Stanhope | 1862-63 | S. Dickson |
| 23 | 28¼ | Anson | 1861-62 | Walter Gowin |
| 24 | 1 | Marmora | 1862-63 | James Cummins |
| 25 | 4 | Harvey | 1862-63 | " |
| 26 | 36¼ | Lake | 1862-63 | " |
| 27 | 3¼ | Cardiff | 1864-65 | Gilmour & Co. |
| 28 | 49 | Galway | 1862-63 | " |
| 29 | 41½ | Limerick | 1862-63 | Campbell, Gilmour & Co. |
| 30 | 41¼ | Cashel | 1862-63 | Potts, Easton, Gilmour & Co. |
| 31 | 20 | Grimsthorpe | 1866-67 | Gilmour & Co. |
| 32 | 4½ | Barrie | 1860-61 | " |
| 33 | 75 | Wollaston | 1860-61 | Harris, Bronson & Coleman |
| 34 | 39½ | Methuen | 1862-63 | James Cummins |
| 35 | 56 | Effingham | 1860-61 | Gilmour & Co. |
| 36 | 1¼ | Abinger | 1860-61 | " |
| 37 | 58 | Anglesea | 1860-61 | " |
| 38 | 24¼ | Tudor | 1862-63 | James Cummins |
| 39 | 34¼ | Chandos | 1862-63 | Gilmour & Co. |
| 40 | 3¾ | Lutterworth | 1872-73 | Boyd, Smith & Co. |
| 41 | ¼ | Anstruther | 1887-88 | Richd. Pearse |
| 42 | 3¼ | Marmora | 1866-67 | A. S. Page & Co. |
| 43 | 10¾ | Tudor | 1862-63 | J. Lingham |
| 44 | 35¼ | Faraday | 1863-64 | Sanford Baker |
| 45 | ¼ | Herschel | 1863-64 | " |
| 46 | 19 | Hinchinbrooke | 1862-63 | A. Hooper |
| 47 | 35¼ | Kaladar | 1862 63 | D. D. Bogart |
| 48 | 3½ | Hungerford | 1862-63 | " |
| 49 | ½ | Dungannon | 1860-61 | Sanford Baker |
| 50 | 5 | Limerick | 1860-61 | " |
| 51 | 11¾ | Anglesea | 1862-63 | D. D. Bogart |
| 52 | 86½ | Kennebec | 1862-63 | D. D. Bogart and H. B. Rathbun |
| 53 | 27¼ | Sheffield | 1862-63 | W. Frizzell |
| 54 | 4¼ | Elzevir | 1862-63 | D. D. Bogart |

DISTRICT.

1890, for a Return showing the number, area and location of each timber berth or other license, etc.—*Continued.*

| Licensee on 1st January, 1890. | Bonus per square mile. | Remarks. |
|---|---|---|
| | $ c. | |
| Mossom, Boyd & Co. | | |
| " | 33 35 | |
| " | 33 35 | |
| " | | |
| " | | |
| " | 25 20 | |
| " | 519 04 | |
| J. Benedict & Son | | |
| " | | |
| " | | |
| Canadian Bank of Commerce | | |
| " " | | |
| " " | 4 00 | |
| " " | | |
| " " | | |
| " " | 37 36 | |
| " " | 23 60 | |
| " " | 38 57 | |
| " " | 323 79 | |
| " " | | |
| " " | 57 60 | |
| Ontario Bank | | |
| " | | |
| Gilmour & Co. | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | 44 10 | |
| " | 2 13 | |
| Richard Pearse | 12 00 | |
| Rathbun Co. | | |
| " | | |
| " | 33 35 | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |

BELLEVILLE

RETURN to an Order of the Legislative Assembly passed on the 28th day of February, territory now under

| No. of License, 1889-90. | Area. | Location. | Date first placed under license. | Name of Original Licensee. |
|---|---|---|---|---|
| 55 | 82 | Grimsthorpe | 1862-63 | D. D. Bogart |
| 56 | 9 | Cashel | 1860-61 | Sanford Baker |
| 57 | 50 | Cardiff | 1863 64 | " |
| 58 | 56 | Methuen | 1862-63 | Cummins, McCabe *et. al* |
| 59 | 16¼ | Lake | 1862-63 | James Cummins |
| 60 | 6½ | Belmont | 1866-67 | T. McCabe |
| 61 | 19¾ | Chandos | 1864-65 | J. C. Hughson |
| 62 | 2 | Loughboro' | 1862-63 | Chaffey & Bros |
| 63 | 3¾ | Bedford | 1862-63 | " |
| 64 | 13¾ | Mayo | 1868-69 | H. F. McLauchlin |
| 65 | 14 | Lutterworth | 1862-63 | Gillies & McLaren |
| 66 | 25¼ | Stanhope | 1862-63 | McDougall & Co |
| 67 | 7¼ | Lutterworth | 1862-63 | A. Dennistoun |
| 68 | 4½ | Somerville | 1863-64 | S. Dickson |
| 69 | 1 | Methuen | 1862-63 | J. S. Fowlds & Bros |
| 70 | 10¾ | Sherbourne | 1869-70 | W. A. Scott |
| 71 | 2 | Harvey | 1862-63 | John Maloney |
| 72 | ¼ | Belmont | 1875-76 | Wm. Sutherland |
| 73 | 37¼ | Monmouth | 1863-64 | J. R. Rodgers |
| 74 | ¾ | Brighton | 1876-77 | H. J. Lott |
| 75 | ¼ | Methuen | 1889-90 | J. Alley |

DISTRICT.

1890, for a return showing the number, area and location of each timber berth or other license, etc.—*Continued.*

| Licensee on 1st January, 1890. | Bonus per square mile. | Remarks. |
|---|---|---|
| | $ c. | |
| Rathbun Co | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| J. P. Tett & Bros | | |
| " | | |
| Francis & McCreary | | |
| Estate of late R. C. Smith | | |
| " " | | |
| " " | | |
| " " | | |
| Fowlds Bros | | |
| Chas. Mickle | 4 10 | |
| Wm. T. Bick | | |
| Wm. H. Stacey | 2 10 | |
| Sadler, Dundas & Co | 38 57 | |
| Montgomery, Harrington & Dean | 4 00 | |
| J. Alley | 12 00 | |

OTTAWA

RETURN to an Order of the Legislative Assembly passed on the 28th day of February, territory now under

| No. of License, 1889-90. | Area. | Location. | Date first placed under license. | Name of Original Licensee. |
|---|---|---|---|---|
| 1 | 3½ | Denbigh | 1841 | Wm. Loames |
| 2 | 13½ | Abinger | 1841 | " |
| 3 | 50 | River Amable du Fond | 1854 | Jas. S. Read |
| 4 | 50 | " " | 1854 | " |
| 5 | 26 | River Madawaska | 1841 | Wm. Loames |
| 6 | 4 | Lavant | 1868-69 | Wm. Caldwell |
| | | | 1860-61 | Robt. Teskey |
| | | | 1844-45 | A. Caldwell |
| 7 | 5¼ | Olden | 1846-47 | Jno. Mitchell |
| | | | 1851-52 | Jas. S. Read |
| | | | 1860-61 | Allan Gilmour |
| | | | 1869-70 | Jno. Laurie |
| 8 | 18 | Devine | 1886-87 | Alex. Barnet |
| 9 | 8 | Biggar | | " |
| 10 | 21 | Bishop | | " |
| 11 | 3 | Osler | | " |
| 12 | 14 | Blythfield | 1851-52 | H. Mair |
| | | | 1877-78 | Jno. Tiernay |
| 13 | 12½ | " | 1844-45 | P. McCayer |
| 14 | 40 | Petawawe, South Branch | 1842-43 | A. Forbes |
| 15 | 10 | " " | | C. L. Bingham |
| 16 | 7¾ | Lyndoch | 1851-52 | Jos. Aumond |
| 17 | 3¼ | Ashby | 1851-52 | " |
| 18 | 10 | Denbigh | 1845-46 | D. McLachlin and E. McPhee |
| 19 | ½ | Raglan | 1845-46 | " " |
| 20 | 3½ | Sebastopol | 1882-83 | R. Turner |
| 21 | 27 | Denbigh | 1852-53 | Jas. S Read |
| 22 | 13½ | Ashby | 1852-53 | " |
| 23 | 3¾ | River Madawaska | 1852-53 | " |
| 24 | 45½ | " | 1845-46 | " |
| 25 | 2¼ | River Mississippi | 1852-53 | " |
| 26 | 9¼ | Dalhousie | 1869-70 | Boyd Caldwell |
| | | | 1845-46 | Jas. Bowes |
| | | | 1845-46 | Bell and Oliver |
| | | | 1847-48 | Alex. Caldwell |
| 27 | 28 | Lavant | 1842-43 | Chapman & Co |
| | | | 1842-43 | A. Dickson |
| | | | 1861-62 | Wm. Graham |
| 28 | 27 | River Petewaur | 1845-46 | Jnó. Martin |
| 29 | 41¼ | " South Branch | 1845-46 | Wm. Morris |
| 30 | 100 | River Ottawa | 1845-46 | J. S. Johnstone |
| 31 | 11 | Admaston | 1845-46 | Arthur McArthur |
| 32 | 12 | Constance Creek, Township of Admaston and Grattan | 1845-46 | " |
| 33 | 19 | Chalk River | 1841 | John Egan & Co |
| 34 | 15 | Deep River | 1841 | Wm. Price & Co |
| 35 | 24½ | River Ottawa | 1848-49 | J. S. Johnstone |
| 36 | 18½ | Darling | 1841 | Wm. Price & Co |
| 37 | 4 | McNab | 1869-70 | Alex. Stewart |
| 38 | 50 | Rear Lake Temiscamingue and Montreal River | 1867-68 | D. T. Browne, jr |
| 39 | 13½ | River Petewawe | 1844-45 | Pemberton Bros |
| 40 | 7¼ | Bagot | 1882-83 | Jno. Halliday |
| | | | 1883-84 | " |

DISTRICT.

1890, for a return showing the number, area and location of each timber berth or other license, etc.—*Continued.*

| Licensee on 1st January, 1890. | Bonus per square mile. | Remarks. |
|---|---|---|
| | $ c. | |
| Wm. Mackey | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | 50 00 | |
| " | 16 00 | |
| " | | |
| The Rathbun Co | | |
| " | | |
| " | 33 00 | |
| " | 51 00 | |
| Alex. Barnet | | |
| " | | |
| " | | |
| " | | |
| Wm. Mackey | | |
| " | | |
| O'Brien and Barry | | |
| W. McClyment & Co | | |
| " | | |
| The Rathbun Co | | |
| " | | |
| " | | |
| " | | |
| Thos. Deacon | 14 00 | |
| Wm. Caldwell | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | 6 00 | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | 15 00 | |
| Wm. McClymont & Co | | |
| " | | |
| H. V. Noel | | |
| John Smith | | |
| " | | |
| James Findlay | | |
| " | | |
| J. B. Dickson | | |
| Gillies Bros | | |
| " | 22 00 | |
| " | | |
| McConnell and Riopelle | | |
| Jno. Halliday | 8 00 | |
| " | 4 00 | |

OTTAWA

RETURN to an Order of the Legislative Assembly passed on the 28th day of February, territory now under

| No. of License, 1889-90. | Area. | Location. | Date first placed under license. | Name of Original Licensee. |
|---|---|---|---|---|
| 41 | 3½ | Admaston | 1882-83 | Jno. Halliday |
| 42 | 5 | Darling | 1860-61 | James Porter |
| | | | 1862-63 | D. T. Browne |
| 43 | 11¾ | Bagot | 1884-85 | Jas. Hartney |
| 44 | 34¾ | Lyndoch | 1841 | Dan. McLachlin |
| | | | 1845-46 | Ewen McPhee |
| | | | 1851-52 | Jos. Aumond |
| 45 | 1½ | Hagarty | 1842-43 | Peter Aylen |
| 46 | 6¼ | Bangor | 1845-46 | Allan Gilmour |
| 47 | 51 | Sherwood | 1842-43 | John Porter |
| | | | 1845-46 | Allan Gilmour |
| 48 | 53 | Radcliffe | 1842-43 | Peter Aylen |
| | | | 1841 | Dan. McLachlan |
| | | | 1842-43 | John Porter |
| | | | 1845-46 | Allan Gilmour |
| 49 | 23¼ | Brudenell | 1842-43 | Peter Aylen |
| | | | 1841 | Dan. McLachlin |
| | | | 1851-52 | Jos. Aumond |
| 50 | 9½ | Raglan | 1841 | Dan. McLachlin |
| 51 | 27 | Jones | 1845-46 | Allan Gilmour |
| 52 | 8½ | River Madawaska | 1845-46 | " |
| 53 | 51½ | " " | 1845-46 | " |
| | | | 1841 | Dan. McLachlin |
| 54 | 13 | " " | 1840 | Wm. Chapman & Co. |
| 55 | 55½ | " " | 1945-46 | " |
| 56 | 11 | " " | 1846-47 | Peter Aylen |
| 57 | 46 | " " | 1851-52 | James S. Read |
| 58 | 40 | " " | 1845-46 | Wm. Chapman & Co. |
| 59 | 50 | " " | 1850-51 | James S. Read |
| 60 | 36 | " " | 1845-46 | T. B. Hyde. |
| 61 | 18½ | " " | 1842-43 | Wm Chapman & Co. |
| 62 | 50 | " Petewawe | 1865 66 | Robt. S. Read and E. Burstall |
| 63 | 50 | " Lac Labielle Branch | 1866 67 | Alex. McDonell |
| 64 | 39 | " Trout Lake Branch | 1845-46 | Allan Gilmour |
| | | | 1859-60 | Julien C. Beasdell |
| 65 | 42 | " Bonnechere | 1845-46 | W. H. Tilotson |
| 66 | 70 | " " | 1841 | Jno. Egan & Co. |
| 67 | 100⅓ | " " | 1841 | Col. and Sam't McDonell |
| | | | 1846-47 | Alex. McDonell |
| 68 | 41¾ | " " | 1838 | Col. and Sam't McDonell |
| 69 | 34⅓ | " " | 1841 | " |
| 70 | 22¾ | " Petewawe | 1841 | Wm. Loaune |
| 71 | 15 | " Bonnechere | 1838 | John Egan |
| 72 | 31 | " " | 1841 | Pemberton Bros |
| 73 | 20 | Ottawa and Chalk River | 1846-47 | McConnell & Jo. |
| | | | 1846-47 | R. Conroy |
| 74 | 12 | River Ottawa | 1841 | Jos. Aumond |
| 75 | 6 | Chalk River | 1839 | Donald McGillivray |
| 76 | 10 | " | 1839 | John Supple |
| 77 | 24 | " | 1851-52 | Robt. Conroy and S. Grimes |
| 78 | 15½ | River Bonnechere | 1838 | Jno. Egan & Co. |
| 79 | 15 | " Madawaska | 1841 | Gerard McRae |
| 80 | 50 | " " | 1864-65 | Abner & Philander Coburn, Geo. John |
| 81 | 50 | " " | 1864-65 | Stone and R. Symmes |

DISTRICT.

1890, for a return showing the number, area and location of each timber berth or other license, etc.—*Continued.*

| Licensee on 1st January, 1890. | Bonus per square mile. | Remarks. |
|---|---|---|
| | $ c. | |
| Jno. Halliday | 8 00 | |
| J. & R. Stewart | 13 00 | |
| " | | |
| John Stewart. | | |
| McLachlin Bros. | | |
| " | | |
| " | | |
| "

OTTAWA

RETURN to an Order of the Legislative Assembly passed on the 28th day of February, territory now under

| No. of License, 1889-90. | Area. | Location. | Date first placed under license. | Name of Original Licensee. |
|---|---|---|---|---|
| 82 | 50 | River Madawaska | 1864-65 | Stone and R. Symmes |
| 83 | 50 | " | 1864-65 | " |
| 84 | 50 | " | 1864-65 | " |
| 85 | 50 | " | 1864-65 | " |
| 86 | 50 | Lake Temiscamingue | 1851-52 | S. J. Dawson |
| 87 | 4 | Lake Ottawa | 1851-52 | H. L. Routh |
| 88 | 50 | Montreal River | 1851-52 | S. J, Dawson |
| 89 | 50 | River Petewawe | 1845-46 | John Porter |
| 90 | 41 | " | 1845-46 | David Gilmour |
| 91 | 50 | " | 1845-46 | J. McDonald |
| 92 | 25 | " | 1846-47 | Jno. Supple |
| 93 | 42½ | " | 1845-46 | C. & S. McDonell |
| 94 | 71 | " | 1845-46 | C. L. Brigham |
| 95 | 24 | " | 1846-47 | T. C. Brigham |
| 96 | 100 | " | 1866-67 | John T. Browne |
| 97 | 9½ | Cardiff | 1851-52 | John Egan |
| | | | 1853-54 | Peter Aylen |
| 98 | 45 | Faraday | 1842-43<br>1845-46<br>1851-52 | John Egan |
| | | | 1851 52 | " |
| 99 | 65½ | Herschel | 1853-54 | Peter Aylen |
| 100 | 11½ | Monteagle | 1842-43<br>1851-52 | John Egan |
| 101 | 50½ | McClure | 1853-54 | Peter Aylen |
| 102 | 24¼ | Sabine | 1853 54 | " |
| 103 | 55½ | Dungannon | 1842-43<br>1845-46<br>1851-52<br>1865-66 | John Egan |
| 104 | 12 | Chalk River | 1841 | John Supple |
| 105 | 5 | " | 1841 | John Egan & Co |
| 106 | 18 | " | 1841 | John Egan |
| 107 | 23 | River Madawaska | 1841<br>1845-46<br>1865-66 | "<br>M. L. Russell |
| 108 | 8½ | " | 1842-43<br>1865-66 | John Egan<br>M. L. Russell |
| 109 | 50 | River Ottawa | 1851-52 | Wm. Moffat |
| 110 | 36 | " Amable du Fond | 1845-46 | Adam Dawson |
| 111 | 14¾ | " Matawin | 1846-47 | " |
| 112 | 13 | " Ottawa and Matawin | 1847-48 | Daniel O'Meara |
| 113 | 21¾ | " " | 1850-51 | S. J. Dawson |
| 114 | 80 | " Ottawa | 1845-46 | Richard McConnell |
| 115 | 100 | " " | 1866-67 | " |
| 116 | 52 | " Petewawe | 1845-46 | Nicholas Sparks |
| 117 | 34 | " " South | 1845-46 | W. & J. Thomson |
| 118 | 34 | " " North | 1845-46 | " |
| 119 | 18 | Ottawa and Petewawe | 1846-47 | Wm. Rogerson |
| 120 | 46 | " | 1849-50 | John Egan |
| 121 | 6½ | River Ottawa | 1846-47 | John Supple |
| 122 | 50 | " " | 1842-43 | William Price |
| 123 | 24½ | " " | 1845-46 | Wm. Price & Co |
| 124 | 56 | " " | 1849 50 | John Egan |

DISTRICT.

1890, for a return showing the number, area and location of each timber berth or other license, etc.—*Continued.*

| Licensee on 1st January, 1890. | Bonus per square mile. | Remarks. |
|---|---|---|
| | $ c. | |
| Perley & Pattee | | |
| " | | |
| " | | |
| R. R. Grindley | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| The Bronsons & Weston Lumber Co. (Ltd.) | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| Bk. of Montreal and the Bronson's & Weston Lumber Co. | | |
| " " | | |
| " " | | |
| " " | | |
| " " | | |
| " " | | |
| " " | | |
| " " | | |
| " " | | |
| " " | | |
| " " | | |
| " " | | |
| " " | | |
| " " | | |

OTTAWA

RETURN to an Order of the Legislative Assembly passed on the 28th day of February, territory now under

| No. of License, 1889-90. | Area. | Location. | Date first placed under license. | Name of Original Licensee. |
|---|---|---|---|---|
| 125 | 10 | River Petewawe | 1844-45 | John Egan & Co. |
| 126 | 50 | " Ottawa | 1851-52 | H. L. Routh |
| 127 | 25 | " " | 1850-51<br>1862-63 | R. W. Learmid |
| 128 | 21¾ | " Petewawe | 1839 | Wm. Morris |
| 129 | 4¼ | Blythfield | 1846-47 | Wm. Price & Co. |
| 130 | 21½ | " | 1842-43 | A. Wilson |
| 131 | 32½ | River Madawaska | 1849-50 | Jas. Wadsworth |
| 132 | 36½ | " " | 1846-47 | H. V. Noel |
| 133 | 29 | " Petewawe | 1845-46 | David and Jas. Gilmour |
| 134 | 50 | " " | 1855-46 | David Gilmour |
| 135 | 34 | " " | 1847-48 | Allan Gilmour |
| 136 | 44 | " " | 1845-46 | James Gilmour |
| 137 | 12 | " " | 1846-47 | Arch. Wilson |
| 138 | 22½ | " " | 1849-50 | J. L. McDougall |
| 139 | 21¼ | " Ottawa and Petewawe | 1845-46 | Arch. Wilson |
| 140 | 8½ | " Matawin | 1845-46 | Jas. S. Johnstone |
| 141 | 39 | " Petewawe | 1880-81 | John Frs. Dowling |
| 142 | 100 | Montreal River | 1852-53 | Allan Gilmour |
| 143 | 40 | Indian " | 1845-46 | Andrew Porter |
| 144 | 40 | " " | 1845-46 | John Porter |
| 145 | 50 | River Ottawa | 1851-52 | H. L. Routh |
| 146 | 55½ | Ashby | 1842-43 | Arch. Wilson |
| 147 | 23 | Effingham | 1842-43 | " |
| 148 | 54 | River Madawaska | 1845-46 | Jas. Wadsworth |
| 149 | 33¾ | " " | 1842-43 | Arch. Wilson |
| 150 | 10 | " " | 1847-48 | James Porter |
| 151 | 50 | " " | 1845-46 | Edward Bourke |
| 152 | 27 | " Ottawa | 1838 | Chas. Symmes |
| 153 | 69 | " Madawaska | 1845-46 | H. L. Routh |
| 154 | 41¼ | " " | 1845-46 | Alex. McDonell |
| 155 | 51 | " " | 1845-46 | Edward Bourke |
| 156 | 25 | " " | 1847-48 | John Egan |
| 157 | 50 | " " | 1849-50 | " |
| 158 | 50 | " Matawin | 1865-66 | Hon. Jas. S. Read and D. Moore |
| 159 | 13 | " Bonnechere | 1841-42 | John Egan & Co. |
| 160 | 16 | Grattan | 1846-47 | Joseph Parent |
| 161 | ½ | Stafford | 1869-70 | Richard White |
| 162 | ¼ | Alice | 1872-73 | " |
| 163 | 3 | Petewawe | 1869-70 | " |
| 164 | 4 | Wilberforce | 1866-67 | John Swalwell |
| 165 | 49 | Indian River | 1838 | Atkinson & Usborne |
| 166 | 7 | " | 1846-47 | John Supple |
| 167 | 15 | " | 1845-46 | J. S. Johnstone |
| 168 | 17 | River Petewawe | 1845-46 | George Lang |
| 169 | 50 | " " | 1845-46 | J. McDonnell |
| 170 | 54½ | " Matawin | 1851-52 | S. J. Dawson |
| 171 | 52 | " " | 1853-54 | S. J. Dawson and J. S. Read |
| 172 | 25½ | " " | 1851-52 | S. J. Dawson |
| 173 | 40 | " " | 1863-64 | Jno. McLaurin |
| 174 | 45¼ | " " | 1866-67 | Mrs. Anna Johnstone |
| 175 | 50 | " " | 1865-66 | Jno. McLaurin |
| 176 | 50 | " " | 1865-66 | Hon. J. S. Read and David Moore |
| 177 | 28 | " Madawaska | 1845-46 | Joseph Aumond |

DISTRICT.

1890, for a return shewing the number, area and location of each timber berth or other license, etc.—*Continued.*

| Licensee on 1st January, 1890. | Bonus per square mile. | Remarks. |
|---|---|---|
| | $ c. | |
| George Hay | | |
| La Banque Nationale | | |
| " | | |
| W. R. Thistle and H. K. Egan | | |
| W. R. Thistle, James Carswell and W. McKay | | |
| " " " | | |
| " " " | | |
| " " J. Francis | | |
| " " " | | |
| " " " | | |
| " " " | | |
| W. R. Thistle | | |
| " | | |
| Wm. Mackay | | |
| " | | |
| Rep. of late R. Ryan | | |
| J. R. Booth | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | 24 00 | |
| " | 4 00 | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| R. R. Grindley | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | 4 00 | |
| " | 4 00 | |
| " | 4 00 | |
| " | | |

OTTAWA

RETURN to an Order of the Legislative Assembly passed on the 28th day of February, territory now under

| No. of License, 1889-90. | Area. | Location. | Date first placed under license. | Name of Original Licensee. |
|---|---|---|---|---|
| 178 | 37½ | River Madawaska | 1845-46 | Joseph Aumond |
| 179 | 4 | Olden | 1851-52 | James S. Read |
| 180 | 47 | River Madawaska | 1866-67 | J. R. O'Connor |
| 181 | 1¼ | Chisholm | 1882-83 | Alex. Fraser |
| 182 | 1 | Nipissing | 1882 83 | " |
| 183 | 7⅓ | Himsworth | 1882 83 | " |
| 184 | 34 | River Madawaska | 1863-64 | Jas. Walker and Alex. Fraser |
| 185 | 1¼ | Ashby | 1841 | Geo. and R. Lang |
| 186 | 25 | Griffith | 1841 | " |
| | | | 1841 | Wilson & Wadsworth |
| 187 | 38 | Lyndoch | 1841 | Geo. and R. Lang |
| | | | 1841 | Wilson & Wadsworth |
| 188 | 23 | Denbigh | 1841 | Joseph Aumond |
| 189 | 17 | River Madawaska | 1841 | Geo. and R. Lang |
| 190 | 33¾ | " | 1841 | Joseph Aumond |
| 191 | 47 | " | 1841 | Wilson & Wadsworth |
| | | | 1841 | Alex. Sniddon |
| | | | 1841 | John Colton |
| 192 | 11 | Pakenham | 1854-55 | John Brown |
| | | | 1864-65 | Samuel Dickson |
| | | | 1864-65 | " |
| 193 | 8 | Darling | 1841 | Wm. Price & Co. |
| 194 | 13 | " | 1841 | " |
| 195 | 16 | Lavant | 1841 | Andrew Dickson |
| 196 | 8 | River Madawaska | 1840 | Gerard McRae |
| 197 | 27 | " Bonnechere | 1838 | Wm. Byers |
| 198 | 34 | Little Madawaska River & Bonnechere | 1841 | John Egan & Co |
| 199 | 25 | River Mississippi and Madawaska | 1846-47 | Gerard McRae |
| 200 | 38 | River Madawaska | 1841 | " |
| 201 | 3¾ | Herschel | 1850 51 | Robt. Conroy |
| 202 | 21 | McClure | 1850-51 | " |
| 203 | 5 | Dungannon | 1850-51 | " |
| 204 | 3½ | Monteagle | 1850-51 | " |
| 205 | 47¼ | River Madawaska | 1851-52 | " |
| | | | 1850 51 | " |
| 206 | 65¾ | " | 1851-52 | " |
| 207 | 50 | Lake Tamiscamingue | 1851-52 | Samuel McDonnell |
| 208 | 4¼ | Canonto South | 1852-53 | James S. Read |
| 209 | 65¼ | Palmerston | 1845-46 | " |
| 210 | 2⅝ | Denbigh | 1852-53 | " |
| 211 | 42⅔ | Abinger | 1851-52 | Jas. Wadsworth and J. Porter |
| 212 | 63¼ | Clarendon | 1845-46 | Wm. Morrow |
| 213 | 10¼ | Miller | 1845-46 | " |
| 214 | 11½ | Oso | 1860-61 | Allan Gilmour |
| 215 | 16 | Olden | 1846-47 | John Mitchell |
| 216 | 3 | North Sherbrooke | 1848-49 | John Flintoft |
| 217 | 4 | Ashby | 1852-53 | James S. Read |
| 218 | 5¾ | Effingham | 1851-52 | Jas. Wadsworth |
| 219 | 50 | Barrie | 1845-46 | Wm. Morrow |

DEPARTMENT OF CROWN LANDS,
TORONTO, 2nd April, 1891.

DISTRICT.

1890, for a return showing the number, area and location of each timber berth or other license, etc.—*Continued.*

| Licensee on 1st January, 1890. | Bonus per square mile. | Remarks. |
|---|---|---|
| | $ c. | |
| R. R. Grindley | | |
| James Erwin | | |
| Alex. Fraser | 4 00 | |
| " | 200 00 | |
| " | 200 00 | |
| " | 200 00 | |
| " | 26 50 | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| " | | |
| Merchants' Bank of Canada | | |
| " " | | |
| " " | | |
| A. and P. White | | |
| " | | |
| Merchants' Bank of Canada | | |
| " " | | |
| " " | | |
| " " | | |
| " " | | |
| " " | | |
| " " | | |
| " " | | |
| " " | | |
| Jas. McLaren and W. C. Edwards | | |
| " " | | |
| " " | | |
| " " | | |
| " " | | |
| " " | | |
| " " | 35 00 | |
| " " | | |
| " " | | |
| " " | | |
| " " | | |
| " " | | |

AUBREY WHITE,
Assistant Commissioner.

# COPY

Of a Minute of the Department of Education, dated the 25th day of March, A.D. 1891, approving certain rules with respect to the Salaries of Teachers in the Provincial Normal and Model Schools.

Presented to the Legislative Assembly,

By Command,

J. M. GIBSON,
*Provincial Secretary.*

Provincial Secretary's Office,
Toronto, 13th April, 1891.

# COPY

Of a Minute of the Department of Education, Dated the 25th day of March, A.D. 1891.

Upon consideration of a report of the Honorable the Minister of Education, dated the 18th day of March, A.D. 1891, the Department of Education doth hereby order,

That the annexed rules with respect to the salaries of teachers in the Provincial Normal and Model Schools be approved of.

Certified,
(Signed) J. LONSDALE CAPRÉOL,
Assistant Clerk, Executive Council.

(1) That principals of normal schools be paid a probationary salary of $2,300 for the first two years' service, and that, on satisfactory proof of efficiency, an annual increase of $50 be allowed until the salary reaches the sum of $2,500, after which no further increase shall be made.

(2) That assistants be allowed the probationary salary of $1,800, and that, on satisfactory proof of efficiency, an annual increase of $50 shall be made until the salary reaches $2,000, after which no further increase shall be made.

(3) That all other masters be allowed a probationary salary of $800 for two years, and on satisfactory proof of efficiency, an annual increase of $50 shall be made until the salary reaches $1,000, after which no further increase shall be made.

(4) That a probationary salary of $1,000 and $1,300 respectively, be paid to the head-mistress and head-master for a period of two years, and thereafter, in the event of a satisfactory report from the principal of the normal school as to diligence, efficiency and success, an advance of $50 per annum shall be made for a period of four years, after which there shall be no further advance in the salary of head-mistress and head-master.

(5) That a probationary salary of a male assistant teacher shall be $1,000 for the period of two years, and that thereafter, in the event of a satisfactory report from the principal as to diligence, efficiency and success, an advance of $50 per annum shall be paid for a period of four years, after which there shall be no further advance in the salary of such teacher.

(6) That a probationary salary of $650 be paid assistant female teachers for a period of two years, and that thereafter, in the event of a satisfactory report from the principal as to diligence, efficiency and success, an advance of $50 per annum shall be made for a period of four years, after which there shall be no further advance in the salary of such teacher.

(7) That all assistant teachers on the staff of the provincial model schools have equal rank, and that vacancies arising from time to time be filled, either by the transfer of teachers already in the service, or by new appointments irrespective of any distinction as to class or form.

(8) That any increase that may arise under these regulations shall take effect from or after the 1st January, 1891, and that any teacher who may have served for a period of more than two years shall, for the purpose of this regulation be considered as having completed only his probationary term.

# RETURN

To an Address to His Honour the Lieutenant-Governor, passed by the Legislative Assembly on the 20th day of March, 1891, praying that he will cause to be laid before the House a Return of copies of all correspondence, except that already brought down, between any member or officer of the Government of Ontario and any member or officer of the Government of the Province of Quebec, with reference to the matters in dispute between the Province of Ontario and the Province of Quebec or any of such matters, of all memoranda or documents shewing the propositions made for the settlement of the said matters or any of them.

By Command,

J. M. GIBSON,
*Secretary.*

Provincial Secretary's Office,
Toronto, April 14th, 1891.

# RETURN

To an Address passed on the 20th day of March, 1891, for copies of all correspondence not already brought down, with reference to matters in dispute between the Provinces of Ontario and Quebec and all memoranda shewing propositions for the settlement thereof.


| Date. | Schedule. | Page. |
|---|---|---|
| 1890. | | |
| Nov. 28 | Memorandum of Provisional arrangements as to accounts between the Provinces | 5 |
| Dec. 12 | Order in Council (Dominion) | 6 |
| " 18 | Under Secretary of State to his Honour the Lieutenant-Governor (Ontario) | 8 |
| 1891. | | |
| Jan. 26 | Letter from Hon. O. Mowat to Hon. J. Shehyn, Treasurer of Quebec | 8 |
| Feb. 4 | Reply (private) | |
| Feb. 7 | Hon. O. Mowat to Hon. J. Shehyn | 9 |
| Mar. 2 | Hon. J. Shehyn to Hon. O. Mowat | 9 |
| | Memorandum of Hon. Mr. Ross on Mr. Shehyn's letter of 2nd March, 1891 | 10 |
| | Quebec Act, 1891 | 11 |

8. The arbitrators not to be bound to decide according to strict rules of law, but when they do proceed on their view of a disputed question of law the award is to set forth the same at the instance of either party, and the award shall be subject to appeal so far as relates to such decision to the Supreme Court, and thence to the Privy Council of England, in case their Lordships are pleased to entertain the appeal.

9. In case of an appeal on a question of law being successful, the matter is to go back to the arbitrators for making such changes in the award as may be necessary; or an Appellate Court may take any other direction as to the necessary changes.

10. The terms of the reference to be hereafter drawn up in due form if approved by the several Governments, and the ratification by the Parliament of Canada and the Legislatures of Ontario and Quebec to be obtained as quickly as possible.

11. It is understood that there is nothing binding on either party in the above, nor unless or until the same has the sanction of the respective Governments.

---

CERTIFIED COPY OF A REPORT OF A COMMITTEE OF THE HONOURABLE THE PRIVY COUNCIL, APPROVED BY HIS EXCELLENCY THE GOVERNOR-GENERAL IN COUNCIL ON THE 12TH DECEMBER, 1890.

On a Report dated 5th December, 1890, from the Minister of Finance, stating that an interview held at Toronto on the 28th November, 1890, between the Minister of Justice and the Deputy Minister of Finance on behalf of the Dominion Government, Mr. Francois Langelier and the assistant Treasurer of Quebec on behalf of the Government of Quebec, and the Attorney-General of Ontario and other members of the Executive Council of that Province on behalf of the Government of Ontario, among the matters discussed was the unsettled condition of accounts of the old Province of Canada, and all present agreed to recommend to their respective Governments the following proposals:—

1. All questions relating or incident to the accounts between the Dominion and the two Provinces of Ontario and Quebec, and to accounts between the two Provinces of Ontario and Quebec to be referred to a Board of Arbitrators consisting of three of the Judges to be chosen as hereafter mentioned.

2. The accounts are understood to include the following particulars:

(*a*) The accounts as rendered by the Dominion to the Province up to January, 1889.

(*b*) In the unsettled accounts between the Dominion and the two Provinces the rate of interest and the mode of computation of interest to be determined.

(*c*) The accounts as rendered by the Dominion to the two Provinces up to January, 1889, to be determined upon.

(*d*) The claims made by the Dominion Government on behalf of Indians, and payments made by that Government to Indians, to form a part of the reference.

(*e*) The arbitrators to apportion the amount which should go to each of the Provinces in the event of the principal of the Common School Fund being paid over to the two Provinces.

(*f*) The arbitrators to apportion the liability of Ontario and Quebec as to any claim allowed the Dominion Government, and to apportion between Ontario and Quebec any amount found to be payable by the said Government.

(*g*) All other matters of account (1) Between the Dominion and the two Provinces. (2) Between the Dominion and either of the two Provinces; and (3) Between the two Provinces.

(*h*) The outstanding question as to the Upper Canada Land Improvement Fund not to form part of the reference unless the Quebec Government hereafter assent to include the same.

3. The arbitrators to consist of three judges, one to be nominated by the Dominion Government and one by each of the Provincial Governments concerned, it being understood that all three should be approved of by each of the Governments, and that any discussion that may arise as to the selection of any of the judges shall be confidential.

4. The arbitrators not to assume to decide any disputed constitutional questions.

5. In case of a vacancy by death or otherwise among the arbitrators, the same to be filled in the same way as the appointment was first made, namely, by the nomination of the Government whose arbitrator is deceased or become incapacitated, and the nomination to be submitted confidentially to the two other Governments for their approval.

6. Any two of the arbitrators to have power to make an award.

7. The arbitrators or any two of them to have power to make one or more awards, and to do so from time to time.

8. The arbitrators not to be bound to decide according to strict rules of law, but when they do proceed on their view of a disputed question of law the award is to set forth the same at the instance of either party, and the award shall be subject to appeal so far as relates to such decision to the Supreme Court, and thence to the Privy Council of England, in case their Lordships are pleased to entertain the appeal.

9. In case of an appeal on a question of law being successful, the matter is to go back to the arbitrators for making such changes in the award as may be necessary; or an Appellate Court may make any other direction as to the necessary changes.

10. The terms of the reference to be hereafter drawn up in due form if approved by the several Governments, and the ratification by the Parliament of Canada and the Legislatures of Ontario and Quebec to be obtained as quickly as possible.

The Minister recommends that the foregoing receive the sanction of the Dominion Government subject to the approval hereof by the Governments of Ontario and Quebec.

The Committee concurring in the above advise that the Secretary of State be authorized to transmit a copy of this minute to the Lieutenant-Governors respectively of the Provinces of Ontario and Quebec.

All which is respectfully submitted for your Excellency's approval.

(Sd.) John J. McGee,
Clerk Privy Council.

---

Copy of Despatch from the Secretary of State to His Honour the Lieutenant-Governor.

Ottawa, 18th December, 1890.

Sir,—His Excellency the Governor-General, having had under his consideration in council a report from the Honourable the Minister of Finance, arising out of an interview held in the city of Toronto, on the 28th ultimo, between certain representatives of the Government of Canada and of the Governments of Ontario and Quebec, respectively, at which interview among other matters discussed, was the unsettled condition of the accounts of the old Province of Canada.

I am now to transmit, for your Honour's information, copy of an order of his Excellency in Council made in the premises.

I have the honour to be, sir,
Your obedient servant,

L. A. Catellier,
Under Secretary of State.

His Honour The Lieutenant-Governor of Ontario,
Toronto.

---

Letter from the Premier of Ontario to the Treasurer of Quebec.

This was a letter dated 26th January, 1891, expressing hope that the Order in Council about the arbitration would be passed before the Quebec Premier should leave for Europe, and suggesting that the three governments ought to have Orders in Council in the same terms.

The letter of the Quebec Treasurer in reply was marked private.

---

TORONTO, 7th February, 1891.

SIR,—I have your note of the 4th. Are you sure that your Government objected to any enquiry as to the interest at 6 per cent. on the Upper Canada Building Fund of $600,000? I do not recollect anything in the award which could possibly be considered as having settled the question. If I recollect aright the ground on which Mr. Ross made the claim was that the interest paid to the seignors was at 6 per cent., and that by statute the allowance on the $600,000 was to be at the same rate. I shall not claim that anything which is settled by the award is open to investigation under the new arbitration or otherwise. I had not been thinking particularly of the question of this interest, but now that you mention it, I do not see why it should not be included.

Yours, etc.,

O. MOWAT.

The Honourable JOSEPH SHEYN,
Quebec.

---

QUEBEC, 2nd March, 1891.

SIR,—I have not had time hitherto to answer your letter of the 7th February.

If you will refer to the letter of the Honourable the Prime Minister of the 6th December, 1888, you will see that this Government then objected to any arbitration which would affect the amount of the Upper Canada Building Fund, as included in the statement of the debt of the late Province of Canada, which was approved by an order of the Privy Council of the 17th August, 1869, based on a report of the proceedings of the conference held in Montreal on the 24th and subsequent days of July, 1869, at which the Dominion and the Provinces of Ontario and Quebec were officially represented. The Government is to-day of exactly the same mind as it was in December, 1888, on this point.

At the conference above referred to the statement of the debt of the late Provinces of Canada was submitted, and the Treasurers of Ontario and Quebec were respectively called upon to indicate any objections that they might have to the items composing it. Certain items were, on the representation of the Treasurers of Ontario and Quebec, modified, among others the Upper Canada Building Fund was increased by $36,800, the Upper Canada Building Fund debenture account being added to the liabilities. No claim was made by the Treasurer of Ontario at this conference for the addition of 1 per cent. interest on the $600,000 which Ontario now wishes to be added to the amount of the fund and charged against the late Province of Canada; and although the interest on the $600,000 was changed from 6 per cent. to five per cent from the date of the approval of the Seignorial Amendment Act of 1859, there seems to have been no objection made in the Parliament of the late Province of Canada, on the part of Upper Canada, to the reduction in the rate of interest.

The amounts of these special funds, which constituted the joint assets that were to be divided between the Provinces of Ontario and Quebec, were, in our opinion, considered as final, but could be apportioned between the two provinces as the arbitrators might see fit to award.

In the revised statement of the debt of the late Province of Canada, as prepared by the Treasurer of Ontario and transmitted to the treasurer of Quebec on the 18th December, 1869, there is no mention of any increase to the Upper Canada Building Fund beyond the amount as approved by the order of the Privy Council above referred to.

It would manifestly be unfair to the Province of Quebec, even supposing that the claim of Ontario might be allowed by any tribunal, to add an amount to the debt of the late Province of Canada, which amount would become the property of Ontario, and call upon Quebec to pay its proportion of this amount. If the claim had been made and allowed before the confirmation and approval of the debt in August, 1869, that amount would have been assumed by the Dominion with the rest of the surplus debt in 1873, and Quebec thereby relieved from the payment of any portion of it.

I propose, therefore, to have the Order in Council respecting the arbitration passed with the provision that the claims that have been made by Ontario regarding the increase of the Upper Canada Building Fund and the Upper Canada Land Improvement Fund shall not be included in the matters to be submitted to the arbitrators.

Yours, etc.,

JOSEPH SHEHYN,
Treasurer P. Q.

The Honourable O. MOWAT,
Prime Minister of Ontario, Toronto.

---

MEMORANDUM OF HON. A. M. ROSS, EX-TREASURER OF ONTARIO.

*Re* letter of Treasurer of Quebec, March 2nd, 1891, on Ontario's claim for additional ten per cent interest on $600,000 Upper Canada Building Fund, Mr. Shehyn says that no claim was made at the time of the arbitration by the Treasurer of Ontario for the additional ten per cent. interest. This is not correct.

A reference to page 42 of the pamphlet containing arguments of Mr. Wood before arbitrators, published in 1870, shows that Mr. Wood expressly claimed and argued out Ontario's right to have the same interest allowed on the $600,000 as was allowed on the Seignorial Fund, and he quotes the words of the amending Act of 1854 in proof, viz.: "Provided always, that the sum paid by the Receiver-General (to the Seignorial Fund) as interest under this section shall be taken into account in ascertaining the same to which Upper Canada may be entitled to for local purposes, under section of the said Act," and he found fault with Mr. Langton, the auditor, for not having credited the interest correctly in the accounts.

Also in a letter to Sir Francis Hincks, the Finance Minister, of 3rd March, 1870. (The award was not made until September, 1870.)

Mr. Wood objected to the way the account was made up, in the public accounts, in only allowing five per cent., whereas it should have been at six per cent. (See Ontario Sessional Papers, 1873, Vol. 5, No. 37.)

Mr. Shehyn says that the amount of these special funds which constituted the joint assets to be divided were considered as final. There was no finality in the amounts of these trust funds, as given in the statement submitted by Mr.

Langton, and in fact, in several instance the amounts credited to the provinces in the accounts rendered by the Dominion, are different from the amounts given in Mr. Langton's statement, having been changed by corrections; and it is significant, and no doubt with express intention, that the amounts of these trust fund allotted to the provinces are not given in the award, but merely that the fund, without stating its amount, should belong to Ontario or Quebec, as directed. Mr. Shehyn says it would be manifestly unfair to Quebec to add to the debt of the late Province of Canada, which would become the property of Ontario, and call upon Quebec to pay its proportion.

Quebec should recollect that she got her share of this at the time of the seignorial settlement, and Ontario is only now claiming the equivalent of the amount then paid to Quebec, which was guaranteed to her by that settlement, but which, so far, has been withheld from her. As to the plea that if this had been allowed before the assumption of the debt by the Dominion in 1873, it would have been included and Quebec relieved. That argument applies against Ontario as well as against Quebec, as Ontario will have to assume the larger portion of any amount allowed.

Quebec seems to take a strange view of the equity of arbitration. She is willing to submit all questions in regard to which there is a chance of Quebec gaining something, but objects to anything being referred, where there is a possibility a decision might be to her loss. If Quebec refuses to allow the arbitration to deal with either the land improvement fund or the building fund, Ontario should refuse to submit the question as to what interest she ought to pay Quebec on the school fund collected since confederation.

Mr. Shehyn says "there seems to have been no objection made in the parliament of the late Province of Canada, on the part of Upper Canada, to the reduction of the rate of interest."

The parliament of the late province was never informed that such reduction had been made. It was not until 1866-7 that the reduction was shown in the public accounts of that year.

---

## Act passed by the Quebec Legislature.

An Act respecting the settlement by arbitration of accounts between the Dominion of Canada and the Provinces of Ontario and Quebec, and between the said to two provinces:

Whereas certain questions have arisen or may hereafter arise in the settlement of the accounts between the Dominion of Canada and the Provinces of Ontario and Quebec and between the two provinces, concerning which no agreement has hitherto been arrived at, and whereas, at a confereence held on the 28th November, 1890, by representatives of the Governments of the Dominion, of Ontario and of Quebec, it was proposed that these and all other questions arising out of or incident to the settlement of these accounts should be referred to arbitrators;

Therefore Her Majesty, by and with the advice and consent of the Legislature of Quebec, enacts as follows:

1. For the final and conclusive determination of the question above referred to, the Lieutenant-Governor in Council may unite with the Governments of the

Dominion of Canada and the Province of Ontario in the appointment of three arbitrators, to whom shall be referred such of these questions as the Governments of the Dominion and of the two provinces shall mutually agree to submit.

2. The arbitrators shall consist of three judges, one to be nominated by the Dominion, and one by each of the provinces, and all three shall be approved of by each of the governments.

3. The arbitrators shall not assume to decide any disputed constitutional questions, but if any are raised, they will vote and report them with their award, but without delaying their proceedings.

4. Any two of the arbitrators shall have power to make an award.

5. The arbitrators, or any two of them, shall have power to make one or more awards, and to do so from time to time.

6. The arbitrators shall not be bound to decide according to strict rules of law, but may decide upon equitable principles; but when they do proceed on their view of a disputed question of law, the award shall set forth the same at the instance of either party, and the award shall be subject to appeal, so far as relates to such decision, to the Supreme Court, and thence to the Privy Court of England, in case their Lordships are pleased to entertain the appeal.

7. In case of an appeal on a question of law being successful, the matter shall go back to the arbitrators for making such changes in the award as may be necessary; or an Appellate Court may make any other direction as to the necessary changes.

8. The appointment of the said arbitrators by Order in Council and their award in writing, shall bind this province, save in case of appeal on questions of law, as hereinbefore mentioned.

9. In case of a vacancy by death or otherwise, among the arbitrators, the same shall be filled in the same way as the appointment was first made, namely, by the nomination of the government whose arbitrators are deceased or has become incapacitated, approved by the other two governments.

10. The share of the expenses of the arbitration authorized by this Act, to be borne by the Province of Quebec, shall be paid out of the consolidated revenue fund, by warrant of the Lieutenant-Governor, issued upon the certificate of the Provincial Treasurer

11. The Act 51-52 Victoria, chapter 12, is hereby repealed.

12. This Act shall come into force on the day of the sanction thereof.

No. 49.

Copy of an Order in Council respecting the commutation of fees of His Honour Judge Mosgrove, Junior Judge of the County Court of the County of Carleton, under the provisions of 54 Vic., Cap. 10, Sec. 5. Presented to the Legislature 15th April, 1891. (*Not printed.*)

# REPORT.

Of the Master of Titles for 1890.

Presented to the Legislative Assembly,

By Command,

J. M. GIBSON,
*Secretary.*

Toronto, 20th April, 1891.

# REPORT

OF THE

# MASTER OF TITLES

## FOR 1890.

To His Honour,

The Honorable Sir Alexander Campbell,
*Lieutenant Governor of Ontario.*

Toronto, 24th March, 1891.

Sir,—I have the honor to submit the following report with reference to the work done under the Land Titles Act during the year 1890:

During this year, land to the value of $922,680 has been brought under the Act in this county. Of this $783,275 was vacant land which was being cut up into lots; $133,255 was improved property with buildings, and $6,150 farming land. This property was embraced in 58 applications.

During the same period 65 applications were filed for first registration.

The expenses of the office during the year were $7,816.55 The net receipts were $9,062, shewing a surplus of $1,245.45.

In consequence of the lull in land sales in the neighborhood of Toronto, there have been fewer registrations during the year than there were during 1889, notwithstanding the considerable addition to the territory under the operation of the Act, the registrations for 1890 being 4,129, while those for 1889 numbered 4,679.

Largely on account of this, the receipts of the office this year are $1,057.78 less than they were last year. The reduction from $2 to $1, made last year in the charge for issuing Land Certificates, and the large reduction from fifty cents per instrument to thirty, in the charge for examination of titles, also contribute somewhat to this result, but the main cause is the decrease in land sales.

In a number of the properties brought under this year, there were difficulties in the title which, apart from the general advantages attendant upon the system, rendered it advisable that the titles should be quieted.

In accordance with my usual practice, I append herewith a table shewing the value of the various parcels brought under the Act in this office during the present year, with the office costs in each case.

The number of registers now in use is 32.

There have been 162 plans filed. Each lot is entered in a plan index, so that reference can be readily made to the number under which any lot is entered in the register, if the applicant does not know it. There are already four volumes of these indexes. All plans filed under the Land Titles Act are numbered in regular order and the letter "M" is prefixed to the number. Plans under the Land Titles system, can, by this prefix, be at once distinguished from plans filed in the Registry Office, wherever reference is made to a plan in a public advertisement.

The local offices in the districts were inspected during the year. Upon the whole, I found the work well and carefully done, though in one office there appears to be a lack of promptness. I trust, however, that there will be no ground of complaint on this head in future.

As will be perceived by an examination of the following table, the chief business of these local offices is the entry of newly patented lands:—

| Table shewing business at offices of Local Masters during 1890. | Parry Sound. | Sault Ste Marie. | Brace-bridge. | Port Arthur. | North Bay. |
|---|---|---|---|---|---|
| Patents received from Crown Lands Department | 169 | 154 | 78 | 152 | 44 |
| Entered in Register | 190 | 148 | 64 | 146 | 44 |
| n course of entry | 13 | 6 | 14 | 6 | None. |
| Certificate delivered to Patentees. | 127 | 150 | 35 | 119 | 27 |
| " on hand awaiting delivery | 150 | 8 | 29 | 27 | 17 |
| Applications for First Registration received | None. | None. | None. | 3 | None. |
| Applications for First Registration granted | 1 | None. | None. | 1 | None. |
| Applications for First Registration refused | None. | None. | None. | None. | None. |
| Applications for First Registration pending | None. | None. | None. | 2 | None. |
| Number of instruments registered | 70 | 75 | 35 | 57 | 19 |
| Fees payable upon registration | $166 33 | $189 30 | $87 10 | $154 20 | $34 60 |
| Fees payable upon other matters | 12 20 | 6 80 | None. | 12 15 | None. |

The registrations as shown by the small amount of fees received, are few in number, while in the various offices since the Act went into force in January, 1888, there have only been altogether seven parcels of land brought under the system, otherwise than by entry upon the same, being first patented. This, of

course, is natural in territory where, as a general rule, the owners are poor, and the titles simple, and where usually only such dealings with their lands are had as are compelled by necessity. Under such circumstances it is unlikely that settlers will incur the expense of putting their lands under the new system. The costs of bringing newly patented lands under this system are, with the exception of the local master's disbursements, defrayed by the Government, unless where on account of the locatees having dealt with the lands prior to the issue of the patents, special preceedings are necessary. Where there have been no dealings rendering special proceedings necessary, these disbursements rarely exceed from $1 to $2, yet, even this amount is, I understand, often made the occasion of complaint. Registration under the Act is no advantage to the patentee where no previous dealings have been registered, and in the new districts there seems a disinclination to disburse even the insignificant sum mentioned for the sake of the advantage to the country which will accrue by the adoption of the Torrens system in the first instance, so as to prevent the titles ever becoming involved. The patentees forget that the usual practice in these districts has been to register the patents in full, a very wise practice in view of the danger of their being lost and the variations in the reservations contained in different patents, and that the cost attendant upon such registration very considerably exceeded the amount which the patentees are now called upon to pay for the first registration of their lands under the new system.

The amount at the credit of the Assurance Fund on the 31st December last, was $13,318.27, of which $12, 365.38 is in respect of lands in the County of York, including the City of Toronto. The remainder $952,89 has been paid in on account of lands in the districts.

The value of the property brought each year under the Act in this office is as shewn below :—

| | |
|---|---|
| 1885 | $ 60,250 |
| 1886 | 977,439 |
| 1887 | 1,013,679 |
| 1888 | 654,120 |
| 1889 | 887,761 |
| 1890 | 922,680 |

The value given above is the value at the time the property was brought under the Act. In many cases, owing to buildings and other improvements, the value of the properties has vastly increased. The present value of the lands and buildings under the Act in this county cannot be less than $11,000,000.

I have the honor to be,

Sir,

Your obedient Servant,

J. G. SCOTT,

*Master of Titles.*

Table shewing the value of each parcel first registered under the Land Titles Act at Toronto during 1890, and the costs of the Land Titles Office on first registration.

| No. | First Registered Owner. | Value. | Costs. |
|---|---|---|---|
| | | $ c. | $ c. |
| 222 | David Tasken | 3,600 00 | 22 40 |
| 221 | Peter Muckle | 2,000 00 | 18 10 |
| 173 | Angus McKay | 8,580 00 | 29 50 |
| 211 | Samuel Clare | 10,000 00 | 45 70 |
| 227 | Avern Pardoe | 7,000 00 | 15 30 |
| 225 | Michael McConnell | 28,000 00 | 33 10 |
| 229 | Lee and Sherrin | 12,000 00 | 21 40 |
| 228 | Jacob P. Clark | 26,500 00 | 30 60 |
| 232 | Horace Thorne | 20,000 00 | 75 70 |
| 235 | Elias Rogers (substituted for John R. Bond) | 4,050 00 | 19 30 |
| 223 | Toronto Land and Investment Corporation | 14,000 00 | 30 00 |
| 242 | P. H. Strathy | 8,000 00 | 24 60 |
| 239 | James S. Fullerton | 39,750 00 | 27 30 |
| 246 | John Davis | 18,000 00 | 28 40 |
| 234 | John P. Jackson | 16,000 00 | 19 90 |
| 233 | Jackson and James | 5,000 00 | 26 90 |
| 177 | Thomas Williamson | 6,150 00 | 45 60 |
| 248 | Grasett and Kingstone | 50,000 00 | 20 10 |
| 217 | William E. H. Lee | 4,800 00 | 35 70 |
| 243 | Joseph Davidson, *et al* | 15,500 00 | 16 60 |
| 245 | J. W. Lyon and D. D. Reid | 95,000 00 | 50 50 |
| 252 | William J. Hendry, *et al* | 59,400 00 | 29 30 |
| 244 | Frances Travis | 2,700 00 | 26 80 |
| 279 | George W. Strathy | 15,000 00 | 40 80 |
| 277 | Herbert H. Williams | 8,000 00 | 15 50 |
| 258 | John D. Farquhar | 6,400 00 | 23 90 |
| 259 | Agnes M. Watson | 6,400 00 | 6 50 |
| 260 | John Aikens | 8,000 00 | 6 50 |
| 261 | Moses H. Aikens | 8,000 00 | 6 50 |
| 262 | Henry W. Aikens | 8,000 00 | 6 50 |
| 263 | Elma Smith | 8,000 00 | 6 80 |
| 264 | Lizzie P. McCausland | 8,000 00 | 6 50 |
| 265 | George Gurd | 8,000 00 | 6 50 |
| 266 | Euphemia Perry | 20,000 00 | 6 50 |
| 267 | James J. Higman | 8,000 00 | 6 50 |
| 268 | John B. McLachlan | 8,000 00 | 6 50 |
| 269 | Banks and Molesworth | 16,000 00 | 6 50 |
| 273 | Eleanor M. Gurd | 2,000 00 | 21 50 |
| 274 | Henry W. Aikens | 50,000 00 | 6 50 |
| 249 | Patrick G. Foley | 675 00 | 11 10 |
| 270 | John M. Evans | 16,000 00 | 7 20 |
| 271 | William H. Johnson | 20,000 00 | 6 50 |
| 254 | Alexander McRoberts | 24,000 00 | 41 30 |
| 257 | Robert Manson | 7,000 00 | 30 60 |
| 219 | Naomi Moody | 7,100 00 | 76 70 |
| 220 | Robert Moody | 800 00 | 21 60 |
| 214 | Ann Daly | 8,200 00 | 40 70 |
| 250 | James McKay | 10,500 00 | 24 90 |
| 282 | Ephraim J. Clark | 26,400 00 | 28 40 |
| 213 | Joseph Simpson | 4,000 00 | 30 90 |
| 276 | Charles D. Warren | 47,500 00 | 25 50 |
| 226 | William H. Merritt | 4,000 00 | 39 20 |
| 251 | Joseph Gibson | 25,000 00 | 19 20 |
| 160 | William Elliott | 13,000 00 | 21 60 |
| 161 | R. W. Elliott | 25,000 00 | 33 70 |
| 272 | Thomas R. Wood | 19,375 00 | 22 60 |
| 283 | Robert Manson | 15,000 00 | 48 70 |
| 230 | John Lucas | 5,200 00 | 27 20 |
| | Total | $922,680 00 | |

# FIFTH ANNUAL REPORT

OF THE

# COMMISSIONERS

FOR THE

# QUEEN VICTORIA NIAGARA FALLS PARK.

*PRINTED BY ORDER OF THE LEGISLATIVE ASSEMBLY.*

*TORONTO:*
PRINTED BY WARWICK & SONS, 68 AND 70 FRONT STREET WEST
1890.

# FIFTH ANNUAL REPORT

OF THE

# COMMISSIONERS

FOR THE

# QUEEN VICTORIA NIAGARA FALLS PARK.

To the Honourable Sir Alexander Campbell, K. C. M. G.,
*Lieutenant-Governor of the Province of Ontario.*

*May it please your Honor*:

The Commissioners of Queen Victoria Niagara Falls Park, as required by Statute, herewith submit for the information of the Legislature their Fifth Annual Report in relation to the affairs of the Park, together with a statement of the receipts and expenditures for the year ended 31st December, 1890.

Until an assured means is provided, either from local revenues or a legislative grant, for meeting the payment of interest on the debenture indebtedness and the ordinary maintenance of the Park, the Commissioners recognize to the fullest extent the necessity of strictly confining the expenditures to what is absolutely essential to the protection of existing structures or works, and the safety and reasonable convenience of the public. In the exercise of this strict economy no new works of construction or permanent improvements were entered upon during the past year, with the exception of the partial renewal and strengthening of the various bridges, which had become unsafe.

Notwithstanding, however, the inability of the Commissioners, owing to the want of funds, to proceed with certain works, which form part of the plans for the restoration and development of the park, they are glad to be able to report that much has been done by the working staff to improve and beautify the park property. Waste land has been reclaimed; trees and shrubs planted, and the roads, paths and lawns have been extended and improved.

The unsightly crib work that formed part of the old water works system of the Town of Niagara, and which has for many years defaced the grand water view in the immediate vicinity of the great cataract, has been removed by the municipality, greatly improving the general appearance of the park at its most attractive point.

The negotiations with English capitalists for the right to use the waters of the Falls of Niagara for the purpose of generating electricity have been continued during the past year. The object of the promoters is to generate as well as

transmit electricity of enormously high voltage for motive power, lighting and general purposes to all cities, towns and manufacturing points within a radius of from one hundred to one hundred and fifty miles from Niagara Falls. The terms and conditions on which the franchise is to be granted are fully detailed in the report of the Commissioners for 1889, and are briefly as follow:—The lessors to pay for such privilege the sum of $25,000 per annum for the first ten years (of which two years' rental of $50,000 is to be paid in advance) and an increase thereafter of $1,000 a year until the annual rental shall reach $35,000 in the twentieth year, when the contract may be renewed for further periods at that maximum annual rental; all the constructions and plant required for the operation of the works to be carried out subject to the approval of the Commissioners and are in no respect to detract from or in any way deface the park. The promoters were also to receive the franchise to construct and operate an electric railway from the southern boundary of the park along the top of the river bank to Queenston, for which franchise they were to pay $5,000 and five per cent. of the gross earnings of the railway. They were likewise to be allowed to acquire, at a cost fixed by arbitration or private arrangement, the inclined railways at the whirlpool and whirlpool rapids, which they were to operate in connection with the electric railway, and to pay the Commissioners ten per cent. of the gross proceeds derived therefrom. The fares on the railway and inclines to be subject to the approval of the Commissioners.

These terms and conditions were accepted by the representative of the English capitalists, but as they were then carrying on experimental electric works on a very extensive scale at Deptford, England, they were not prepared to conclude the contract until the results of the English operations were more fully known. They were, however, given an option to enter into a contract within one year on depositing $10,000 with the Commissioners as an evidence of good faith, which sum was to be forfeited to the Crown unless a contract was closed on or before 1st March, 1891.

Owing to unforeseen difficulties and delays incident to nearly all large undertakings, and more especially one of the scientific character and enormous magnitude of the proposed scheme, the time for the final closing of the contract passed and the deposit was forfeited.

Letters had been received by the Commissioners during the year from certain persons who desired to negotiate for similar privileges, including the franchise, to construct and operate an electric railway on the upper bank of the river to Queenston. The right to build and work an electric railway under the bank of the river from the Falls to a point below the whirlpool was also solicited by another firm. Pending the currency of the option with the English capitalists no proposals could be entertained, but when that expired on 1st March without a contract being entered into, the Commissioners were then at liberty to treat with the various parties for the rights and privileges they asked for.

Before, however, entering upon new negotiations the Commissioners, after the most careful consideration of every phase of the question, and with due regard to the important interests committed to their care, decided not to accept proposals for acquiring the franchise of the electric railway and the inclines, separate and distinct from the right to use the Falls for the purpose of generating electricity. It appeared to them that the various works and interests are so inseparably connected: the electric railway for the transportation of material and supplies, and the electricity as motive power to work the inclines and railway, that a separation of these schemes would be likely to cause very serious confliction and possibly much friction in separate managements.

For these reasons the Commissioners decided not only to restrict all proposals to the various schemes *en bloc*, but also on the same lines and on similar terms and conditions as were granted to the English capitalists.

With respect to the proposal to construct an electric railway under the bank of the river, on a careful examination of the location by the chairman it seemed so apparent that danger to life and property from falling masses of rock would be so great, even if the most effective precautions were adopted, that the Commissioners decided that the proposal must be rejected.

The parties soliciting the right to build the electric railway on the bank of the river were informed that their offer could not be entertained unless amended so as to include the larger scheme for generating electricity. This they would not do.

Only one offer was made for the construction and operation of electrical works and railway on the lines of the option granted to the English capitalists, but as the parties making the proposal could not comply with the terms of payment and wished the Commissioners to make a reduction in the fixed annual rental and to accept royalties and other considerations in lieu of such reduction, the negotiations could not be further proceeded with.

The representative of the English capitalists at this juncture renewed his proposals to the Commissioners for the extension of the option. He stated that the difficulties which Mr. Ferranti, the eminent electrician in charge of the Deptford works had encountered, were practically solved, and that the transmission of electricity at a pressure of 10,000 volts had actually been effected and transmitted a distance of ten miles. Further reliable information had been received that experiments on the same lines had been carried out in Germany at a pressure of 17,000 volts and the power transmitted for over one hundred miles with very slight loss in transmission.

The chairman of the Commission on the occasion of his being in England during the year, visited the works at Deptford and the stations in London, and was much impressed with the magnitude of the operations that were being carried on, and the system and thoroughness that seemed to characterize the efforts of the Company. He also obtained a partial corroboration of the statements made in respect to the transmission of electricity for motive purposes by personally witnessing at the Grosvenor Station machinery requiring 100 horse-power moved by electricity generated and transmitted from Deptford, a distance of nearly ten miles.

In view, therefore, of the imperative necessity of obtaining means to defray the ordinary maintenance of the park, including the payment of the debenture interest as well as for the gradual improvement of the property, it was evident to the Commissioners that one of two courses have to be adopted in order to provide the necessary funds: First, the development to the fullest extent of the works referred to in order to obtain therefrom and at the earliest possible day a sufficient annual revenue to maintain and improve the park; or failing which, in consideration of the property having become public domain and the park having been practically declared to be free to the whole world, that the Province shall undertake to provide the means of defraying the maintenance expenditures and shall make an annual appropriation for that purpose.

Having for the past four years given the most thoughtful consideration to the first proposition, and having made careful enquiry into the various schemes for generating electricity for transmission for motive and lighting purposes, the Commissioners are convinced that the Province possesses for that purpose a most valuable asset in the practicably unlimited power of the Falls of Niagara. It

is only a question of time when that unlimited power shall become available, and the rapid development that is constantly taking place in electrical science seems to indicate that within the next few years effective transmission for distances of from one hundred to one hundred and fifty miles shall have been accomplished. Already rival schemes are being projected, both on the New York and the Canadian sides of the river, having for their object the utilization of the water power as well as electricity *in the immediate vicinity of the Falls.* The success of these projects involves the removal of factories and establishments in search of cheap motive power to the Falls or in close proximity to them, and the abandonment in many instances and at very great loss of existing buildings and plant. While cheaper motive power might thus be secured it will in such cases be at the expense of giving up greater railway facilities and better distributing advantages than perhaps could be obtained at Niagara Falls or its vicinity. Moreover, many requirements for electric motive power, such as street railways and other services of a localized character, could not be benefited by the proposed method of utilizing the water of Niagara River and Falls.

For these reasons it is quite clear that the advantages of the transmission system are vastly superior in every respect to the local projects. It is quite evident, however, that its development must be placed in the hands of capable and competent men possessing not only the necessary scientific qualifications but also the command of abundant capital. As the result of continued negotiations with all parties desirous of obtaining the rights and privileges to be disposed of, the Commissioners had no hesitation in deciding in favor of English capitalists. In furtherance of this decision and with the consent of the Government an agreement was arrived at to extend the option for another year on the following terms :—

1st. That a further sum of $10,000—making $20,000 in all—should be deposited, which sum shall be forfeited to the Crown unless the contract to lease the water power for generating electricity is finally closed on the terms and conditions previously recited, on or before 1st March, 1892.

2nd. On payment of $5,000 and on furnishing satisfactory evidence to the Government and the Commissioners that the lease for the water power shall be entered into and the work commenced on or before 1st March, 1892, the contract for the franchise for the electric railway shall be executed on the terms specified, in accordance with the Act of the Legislature in that behalf, and the work connected therewith at once commenced.

During 1890 no less than 251,923 persons visited the park as compared with 252,379 in 1889 and 213,874 in 1888. It would appear from the statement attached to the Superintendent's Report that 141,375 of these 251,923 visitors entered the park in 39,487 carriages and vehicles and that the remaining 103,234 were pedestrians. The total revenue derived from this large number of visitors only amounted to $5,815, viz., from the elevator $4,018.50, and from visitors to the islands $1,797.10. As the cost of maintaining the park, including the payment of the interest on the debentures, amounted to $36,037.34, it will thus be seen that the revenue was only equal to about sixteen per cent. of the maintenance expenditures. Had each visitor to the park paid the small fee of five cents and carriages and vehicles twenty cents each, over $20,000 would have been received from admissions, which, together with the fares from the elevator, would have made an aggregate revenue of over $25,000.

A detailed statement of the receipts and expenditures will be found attached to the Superintendent's Report, of which the following is a summary :—

RECEIPTS.

| | | |
|---|---|---|
| Balance at credit in Imperial Bank on 31st Dec., 1890 | | $13,823 36 |
| Received from sale of old material, rents, etc | | 1,176 25 |
| " hydraulic lift tolls | $4,018 50 | |
| " island bridges tolls | 1,797 10 | |
| | | 5,815 60 |
| " Imperial Bank, interest on deposits | | 480 47 |
| " English capitalists as a forfeitable deposit in connection with the proposal to lease the water power of the Falls, being proceeds of bill of exchange for $2,000 | | 9,700 00 |
| Imperial Bank of Canada overdraft | | 5,041 66 |
| | | $36,037 34 |

EXPENDITURES.

| | | |
|---|---|---|
| Salaries and wages, including wages of laborers | $11,842 36 | |
| Paid for materials, etc. | 1,782 24 | |
| Renewal work on bridges, etc | 1,315 83 | |
| Commissioners' expenses | 96 91 | |
| | $15,037 34 | |
| Coupon interest on bonds to 1st July | 10,500 00 | |
| " " 31st December | 10,500 00 | |
| | | $36,037 34 |

The foregoing summary shews that the expenditures for park maintenance for the past year amounted to $15,037.34, as compared with $19,030.88 for the preceding twelve months. The coupon interest in each of the years respectively amounted to $21,000. As the receipts for the year, including the balance at credit at the end of 1889 and $9,700 received as forfeitable deposit in connection with option for lease of water power, only amounted to $20,995.68, the bank account had to be overdrawn to the extent of $5,041.66 in order to clear off the indebtedness for the year.

It will thus be seen that the amount reserved to pay the coupon interest out of a portion of the proceeds of the sale of debentures is now exhausted and the bank account is also overdrawn to the extent of $5,041.66, for which provision will have to be made as well as for the coupon interest and a portion of the ordinary maintenance for the current year.

The appendix contains the Annual Report of the Park Superintendent, Mr. James Wilson, who continues to discharge his duties to the entire satisfaction of the Commissioners.

All of which is respectfully submitted.

C. S. GZOWSKI,
Chairman.
J. W. LANGMUIR,
JOHN A. ORCHARD.

---

ADDENDA, 28th APRIL, 1891.

Since writing the foregoing report the Commissioners have received the additional forfeitable deposit of £2,000 stg. On crediting the accounts with the proceeds of this draft, $9,744.44, and paying the current accounts for the maintenance of the park up to the 1st April instant, the bank account stands on that date as overdrawn $231.62.

C. S. GZOWSKI,
Chairman.

# APPENDIX.

*To the Commissioners of the Queen Victoria Niagara Falls Park:*

GENTLEMEN,—I beg to submit my report for the year ending December 31st, 1890.

In my last year's report, reference was made to a violent storm on the 10th of January, 1889, which caused great damage to property in the immediate vicinity of the park, and destroyed many noble trees and effected other damage within the grounds. This year, and at very nearly the same date, viz., on January 13th, we were again visited by a storm which quite equalled that of 1889 in intensity, but it was of shorter duration and not so steady; therefore it did not exert as great an influence upon the waters of lake or river, and the damage to soil and roadways by flood water was not so great. The varying direction of the hurricane, however, as it veered around from the south-west to west, tended to increase the strain upon all obstacles exposed to its fury, and the suspension bridges connecting the Dufferin islands, were, in turn, most severely tested. One of them, indeed, was for a time in great jeopardy owing to the giving way of the guys on the windward side under the excessive strain caused by the wave-like succession of fierce blasts, and the bridge would undoubtedly have been destroyed had not assistance been at hand at the moment, with tackling and appliances, by means of which temporary stays were secured to points on shore, and the structure secured until the storm abated.

The effects of this tornado were very plainly seen at several points within the park, and many fine trees, principally evergreens, were blown over. Below the Falls the water rose to a height of twenty-five feet above the normal, and carried away the small gangway leading from the winding path from Elevator to Split Rock, although it had been well loaded down with large stones.

The effect of the high water in changing the outline of the Horse Shoe Falls was again made apparent, portions of the rock forming the crest of the Falls being carried away, but the change was of limited extent when compared with the result of the storm of 1889.

The new water works system, which was undertaken by the town authorities under agreement with the park Commissioners and referred to in last year's report, was prosecuted during the spring and summer months and completed early in October. This work occupied a much longer time than was anticipated, owing to the difficulty found in carrying on operations in the spray from the Falls. The extensive excavations required for the various portions of the work, and the large temporary shelters required to protect the workmen employed on the building, were very detrimental to the appearance of the portion of the grounds immediately beyond Table Rock, and no doubt contributed in a large measure to diminish the travel over the upper reaches of the park. A great and permanent improvement has been made by the taking away of the unsightly crib work which formed the old raceway, the removal of the low building used for a pump house, and the levelling off of the foreshore from Table Rock to the end of Cedar Island. When this foreshore is covered over with a good layer of soil and seeded down and planted with the wild flowers and shrubs of the locality, the general appearance of this part of the grounds will be very good indeed. The new pump house

is of a neat design, and is well and substantially built. Although a prominent feature of the landscape, it cannot with reason be objected to.

The past year has not been a favorable one for visitors. During the winter and spring months there was a very considerable falling off in numbers from the corresponding period of last year, and which may be attributed to the prevalence of the strange epidemic known as "la grippe." Later on in the year the excursion travel exhibited a marked diminution, owing, no doubt, to a partial failure of the crops in many parts of the province. To compensate for these losses, however, there were several distinct sources of gain, one of them being the increased advantage taken of the park by the residents of the town and vicinity. This is apparent from the greater number of pedestrians entering the stiles, and from the marked increase in the number of private carriages entering the gates.

Another noticeable feature was the many family and Sunday school picnics held during the period of pleasant weather. The park is found to be an exceptionally favorable place for such gatherings, as, in addition to the fine shade afforded by the foliage, and the magnificent scenery at command, the excessively high temperatures found even in the immediate vicinity of the park, are here tempered by the unique atmospheric conditions created by the mighty fall of water, and children can romp at will, or convalescents swing in their hammocks without experiencing the discomfort usually attending an outing in midsummer elsewhere.

This year the park had the honor of a visit from their Royal Highnesses the Duke and Duchess of Connaught, who spent a couple of days in viewing the falls and surroundings. The Royal party were graciously pleased to express their high appreciation of the works of preservation and restoration accomplished by the Commissioners.

The total number of visitors for the year was 251,923, or slightly under the number reported for 1889. Visitors in carriages were not so numerous by nearly eight thousand, while the pedestrians number over seven thousand in excess.

As was noted in last year's report, the chief day for visitors is Sunday, the percentage for each day of the week being as follows :—

| | |
|---|---|
| Sunday | 19.4 per cent. |
| Monday | 11.7 " |
| Tuesday | 12.7 " |
| Wednesday | 14.2 " |
| Thursday | 13.1 " |
| Friday | 15.5 " |
| Saturday | 13.6 " |
| | 100.0 |

It will also be of interest to note the various nationalities of the visitors who have contributed to our revenues, as recorded in the register kept in the Table Rock House, which gives the tally of these going under the Falls; the proportions are as follows :—

| | |
|---|---|
| United States | 73.8 per cent. |
| Great Britain | 12.4 " |
| Canada | 8.0 " |
| Germany | 2.1 " |
| France | 0.8 " |
| All others | 2.9 " |
| | 100.0 |

From the necessity for the exercise of the strictest economy in the expenditure this year, all works of improvement and restoration had to be postponed, excepting only such as were considered to be absolutely essential to the safety and convenience of the public, and which could not be delayed. The chief work of renewal was the taking out of the unsound needle beams of the two suspension bridges and replacing with new and stronger timbers; this work proved to be even more urgent than was anticipated or could be ascertained from a general inspection of the structures, as, owing to the humidity of the atmosphere consequent on the proximity of the falls, the life of timber is considerably lessened and its strength after a few years much impaired, even though the outer casing may appear to be sound and good.

Both of the suspension bridges had, practically, entirely new floor systems put in, and these should give but little trouble for some years to come. The trusses, however, were not attended to and will require substantial repairs this year, as the ends of many of the chord timbers, and also of the braces, show signs of decay.

The suspension bridges have been much strengthened by the addition of three new and more substantial guy ropes in each case, to prevent motion in case of wind storms. These stays have all been fastened to new and heavy anchorage piers, which have been placed in position to afford a more direct resistance to the swaying of the structures in storms. Two additional guys are needed in order to complete the protection of these bridges from wind pressure, and these should be put on early in 1891.

The fixed span bridge on Dufferin Islands should have a new centre pier, as suggested in last year's report, in which case the Howe trusses could be dispensed with. The cost of the pier would not exceed the outlay required to keep the trusses in order, and the permanent maintenance charge would be considerably lessened.

Slight repairs have been made to the Cedar Island bridges as required during the year. Each of these will require new railings next season.

One of the abutments of the first suspension bridge is in bad order; it was built up of small stones originally and has proved to be too weak for the duty required of it. Its renewal cannot be much longer delayed with safety.

The Table Rock House and Museum buildings received only the most superficial repairs during the year. Both are much in need of immediate attention if they are to be preserved. Owing to the imposing dimensions of these buildings, and their location being so near to the Falls, they are necessarily prominent features of the landscape, and it is desirable that they should be made to appear in some measure worthy of their surroundings.

The works of maintenance were chiefly those consequent on the keeping of the roadways and paths in order, and an effort to make the lawns and turf as even and as effective as possible.

A large piece of the open ground lying west of the gardener's house was in a very rough and uneven condition and could only be kept in order by hand mowing. A portion of it was levelled off and sown in oats and clover. This part will be kept close clipped next year and form a section of the grounds intended to be appropriated for a permanent recreation and play ground. It is proposed to reclaim another piece, contiguous to the above, next year, and thus to gradually recover, at small cost, the unimproved territory embraced by the park.

Economic considerations have again compelled the postponement of anything like a comprehensive and systematic planting out of the grounds with suitable flowering or ornamental trees. A few good flowering shrubs, for bare corners along the cliff walk, being all that could be attempted this season, and regret must again be expressed that another year should be allowed to pass without something being accomplished in this most desirable work.

The flower beds near the museum building were filled with annuals of various kinds. The plants all thrived nicely and afforded a charming "bit" of color to contrast with the lawns and shrubbery.

One of the noticeable effects of the high water in spring was the cutting away of the debris slope under the falls, and more particularly opposite the entrance to the tunnel. At this point the slope or talus was made up chiefly of the shale rock blasted out to form the tunnel and of masses of the same material which have from time to time become detached from the face of the cliff. Owing to the composition of this rock it is subject to disintegration under the combined influence of air and moisture, and in this particular case the action was greatly accelerated by the impact of the water falling over the cliffs, one hundred and twenty feet above. As the shale broke into fragments the water quickly scoured it out, and consequently the narrow path under the cliffs, by which access is had to the tunnel, became impassable. To remedy this the water was prevented from falling over the cliffs at the place in question by a temporary dam, and a strong cribwork was built to form a "toe" for an embankment of limestone, which was with difficulty put in place and carried up to the proper level. Of course all this work had to be done in the spray and where the footing was very insecure owing to constant moisture, but it was accomplished without accident. Advantage was also taken of this temporary shutting off of the water from this part of the cliff to construct some light bridges, by which access may be had to the edge of the river in front of tunnel entrance. This affords a full face view of the cliffs and Falls from the best possible standpoint, and it was very highly appreciated by all the visitors under the Falls who could be persuaded to make the descent; many of them, indeed, spent hours in wrapt enjoyment of the scene, even though subjected to the vagaries of the spray. Should the means at command admit of the expense, it would be desirable to extend this work the incoming year so as to afford greater facilities to visitors for the enjoyment of the magnificent views only to be had along the edge of the river.

Considerable repairs to the shelter in the museum garden were necessary to make it serviceable, and also some slight repairs to various other shelters.

The large spring water ponds near the superintendent's office were thoroughly cleaned out of the accumulated deposits of leaves, etc, and the fish found therein temporarily placed in the ponds in the museum garden.

The pathway leading on to Sumack Island has been extended through to a connection with the main road, forming a very pretty and secluded ramble past Tempest Point. It was a work involving but a trifling expense, but it formed a little "bit" much enjoyed by tourists.

We have felt the need of another edition of our folder all through the past season. Very many applications for a copy of it have been made by those who desired a guide to the park. As the matter is all preserved on the lithographer's stone the cost of another edition would not be great, and of its value there could be no question. The folder prepared by the New York State Reservation Commissioners has been largely distributed, but only a very limited number of the visitors to our park appear to have them.

The survey of the crest line of the Falls, which was undertaken by the New York State surveyors, has at length been completed and will shortly be published. From a statement made by Mr. Bogart, the chief engineer, the maximum recession of the Horse Shoe Fall has been two hundred and seventy feet since 1842, and the average mean recession for the same period one hundred and four feet six inches.

The total amount expended on the maintenance works and renewals for the year, including cost of labor and superintendence, etc., is $15,037.34.

Appendices shewing the number of visitors, receipts, expenditures, etc., for each month have been attached.

The whole respectfully submitted,

JAMES WILSON,
Superintendent.

NIAGARA FALLS, December 31st, 1890.

## QUEEN VICTORIA NIAGARA FALLS PARK.

Statement of expenditure for the year 1890.

| | Maintenance Charges. | | | | General Charges. | | Total. |
|---|---|---|---|---|---|---|---|
| 1890. | Salaries. | Labor. | Materials, etc. | Renewals, of bridges, etc. | Commissioners' expenses. | Interest on bonds. | |
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| January | 604 16 | 310 33 | 180 43 | | | | 1,094 92 |
| February | 604 16 | 220 01 | 102 29 | | | | 926 46 |
| March | 575 66 | 178 69 | 167 58 | | 12 81 | | 934 74 |
| April | 604 16 | 168 75 | 88 63 | | | | 861 54 |
| May | 594 66 | 477 12 | 147 97 | | 15 00 | | 1,234 75 |
| June | 606 16 | 465 39 | 214 40 | 485 83 | | 10,500 00 | 12,271 78 |
| July | 596 67 | 581 90 | 69 49 | 618 45 | | | 1,866 51 |
| August | 606 17 | 571 06 | 76 50 | 211 55 | | | 1,465 37 |
| September | 606 17 | 454 07 | 199 31 | | | | 1,259 55 |
| October | 596 67 | 476 76 | 275 51 | | 25 00 | | 1,373 94 |
| November | 606 17 | 376 50 | 157 41 | | 44 10 | | 1,184 18 |
| December | 603 67 | 357 32 | 102 61 | | | 10,500 00 | 11,563 60 |
| | 7,204 48 | 4,637 90 | 1,782 22 | 1,315 83 | 96 91 | 21,000 00 | 36,037 34 |

JAMES WILSON,
Superintendent.

## QUEEN VICTORIA NIAGARA FALLS PARK.

Statement shewing the number of visitors and the money received for 1890.

| Months, 1890. | No. of carriages entering the park. | No. of Visitors. | | | Receipts from Visitors. | | | Average per visitor cents. | Sundry. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | In carriages | Pedestrians. | Total. | Elevators. | Islands. | Total. | | Receipts, rents, sales, etc. | Interest on bank deposits. | |
| | | | | | $ c. | $ c. | $ c. | c. | c. | $ c. | $ c. |
| January | 712 | 1,941 | 2,915 | 4,856 | 60 25 | 7 10 | 67 35 | 1.38 | 91 50 | ..... | 158 85 |
| February | 992 | 2,750 | 2,901 | 5,651 | 88 50 | 11 75 | 100 25 | 1.76 | 85 50 | ..... ..... | 185 75 |
| March | 986 | 2,826 | 3,084 | 5,910 | 89 50 | 10 70 | 100 20 | 1.69 | 89 25 | ..... | 189 45 |
| April | 1,606 | 4,804 | 5,099 | 9,903 | 174 75 | 39 35 | 214 10 | 2.16 | 85 50 | ..... ..... | 299 60 |
| May | 2,471 | 7,907 | 7,398 | 15,305 | 314 00 | 71 75 | 385 75 | 2.45 | 85 50 | ..... | 471 25 |
| June | 4,396 | 14,762 | 12,235 | 26,997 | 428 25 | 227 95 | 656 20 | 2.43 | 87 00 | 5 58 | 748 78 |
| July | 6,715 | 24,994 | 20,016 | 45,010 | 740 50 | 399 75 | 1,140 25 | 2.53 | 167 25 | ..... | 1,307 50 |
| August | 8,884 | 37,220 | 29,624 | 66,844 | 1,129 25 | 553 05 | 1,682 30 | 2.51 | 125 50 | ..... | 1,807 80 |
| September | 5,309 | 19,562 | 13,422 | 32,984 | 524 00 | 297 45 | 821 45 | 2.49 | 86 25 | ..... | 907 70 |
| October | 3,643 | 12,683 | 7,224 | 19,907 | 303 25 | 134 25 | 437 50 | 2.13 | 102 00 | 44 33 | 583 83 |
| November | 2,008 | 6,510 | 4,140 | 10,650 | 108 25 | 29 85 | 138 10 | 1.29 | 85 50 | ..... | 223 60 |
| December | 1,765 | 5,416 | 2,490 | 7,906 | 58 00 | 14 15 | 72 15 | .91 | 85 50 | ..... | 157 65 |
| Totals, 1890 | 39,487 | 141,375 | 110,548 | 251,923 | 4,018 50 | 1,797 10 | 5,815 60 | 2.30 | 1,176 25 | 49 91 | 7,041 76 |
| Totals, 1889 | 42,405 | 149,145 | 103,234 | 252,379 | 3,849 25 | 856 10 | 5,705 35 | 2.26 | 974 50 | 1,371 48 | 3,051 33 |

Signed. JAMES WILSON,
Superintendent.

# NINTH ANNUAL REPORT

OF THE

# PROVINCIAL BOARD OF HEALTH

## OF ONTARIO

BEING FOR THE YEAR 1890.

*PRINTED BY ORDER OF THE LEGISLATIVE ASSEMBLY.*

*TORONTO:*
PRINTED BY WARWICK & SONS, 68 AND 70 FRONT STREET WEST.
1891.

# NINTH ANNUAL REPORT

OF THE

# PROVINCIAL BOARD OF HEALTH

To Sir Alexander Campbell, K.C.M.G.,
*Lieutenant-Governor of the Province of Ontario.*

*May it Please Your Honour:*

In presenting its ninth annual report the Provincial Board of Health is gratified to be able to record the fact, that during the past year there has not been a single outbreak of smallpox.

The Province has not been equally fortunate in escaping the visitation of other zymotic diseases. Thus in Toronto, with an estimated population of 178,000, typhoid fever caused 117 deaths, diphtheria 71, measles 18, and scarlet fever 14. The total deaths for the year were 2,919, the ratio per 1,000 of population 16.39, and the zymotic death-rate 3.43. Now the zymotic death-rate, or in other words, the mortality from preventable diseases is a measure whereby one may test the purity of a municipality's water supply, its freedom from nuisances, and the fidelity with which notification, isolation and disinfection are attended to in resisting the attacks of contagious disease within its borders.

The postulate of hygiene is: given pure air, particularly in inhabited places, purity of water supply, prompt action in giving notice of the existence of zymotic disease, immediate isolation of patients and exposed persons, with the necessary disinfection of persons and things, and zymotic disease will soon cease to appear in any locality. The nearer a municipality approaches to the conditions of the postulate, the freer will it be from diseases of this class.

Measured by this standard, Toronto with its zymotic mortality of 3.43 may be considered one of the healthiest cities in the Dominion, the zymotic death-rate of Quebec for 1890 being 9.88 per 1,000, Montreal 7.08, Halifax 5.82, Ottawa 5.36, Winnipeg 4.89, St. John, N.B., 3.49, Hamilton 3.49, and London 2.09. And yet if we compare even the best of these, that of London, Ontario, with 1.5 the zymotic death-rate of Kensington, a London parish having a population of 178,000, we gain some idea of the extent of our own shortcomings, and also of the influence which hygiene can and does exert even in densely populated cities, in preventing the spread of contagious diseases, and consequently preserving the lives of the people. It is evident, therefore, that if we would attain to the highest degree of sanitary well-being, the people of Toronto as well as other Ontario municipalities must strengthen the hands of their Local Boards of Health, and see to the appointment of competent medical health officers whose duty it will be to look narrowly into existing defects, and by advising their removal, accomplish much actual good, while at the same time raising the standard of hygienic endeavor among the people.

In this Province, as in other countries, about 85 per cent. of all deaths from diphtheria are of children under ten years of age. Among grown people the mortality is much less. One reason why the mortality from diphtheria is large in Ontario while that from smallpox is nothing, is that for diphtheria there is no such preventive measure

have the people of Ontario become to their protective influence that, if we are to judge of public opinion from press comments, we can only conclude that the individual, having yielded his personal privileges to the governments, whether state or municipal, which have undertaken to legislate regarding his health, is now fully determined that such governments shall thoroughly perform the functions they have assumed.

That these legal guardians are ready to assume the duty may be judged from the many directions in which they are seeking to protect the people against disease. School laws abound providing for improved construction, ventilation and cleanliness of school buildings; and efficient enactments are provided for preventing the spread of disease to pupils and from them. Dairy products, whether as milk or articles manufactured therefrom, are receiving increasing, even special, attention; while the diseases of cattle and all animals, intended for human food, are being investigated with increasing care to prevent from this source the emanation of influences inimical to health.

While doubtless our most dangerous foes are those of our own household, yet the conservancy of the public health extends to malign influences beyond our own borders, and our efforts have not ceased until we can now behold a quarantine which for three years has absolutely prevented the ingress of infectious disease by the St. Lawrence; while our relations in health matters with neighboring provinces and states are as intimate as those between any two municipalities within our own jurisdictiction.

The perfecting of municipal machinery and the improvement of methods for obtaining practical sanitary results seem almost all that we have now to concern ourselves with.

In almost every phase of the public health problem our postulates have been admitted and what is left for us is, that we prove practically the correctness of the propositions formulated. We have, unfortunately, to admit that accomplishment lags, and must always, greatly behind all human endeavor; and as that which we would we do not, there would at times seem to be grounds for caustic rejoinder to our too confident pretensions.

Among the matters, however which our experience during the past seven years has led us to believe demand special attention, are those contained in the proposed legislation which you have adopted as a report, from the standing committee on legislation. They are set forth in the following Bill.

AN ACT TO AMEND THE PUBLIC HEALTH ACT.

HER MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:

1. This Act may be cited as "*The Public Health Act 1891.*"

2. Sub-section 3 of section 99 of *The Public Health Act* as added by section 1 of the "*Act to amend the Public Health Act with respect to the Sale of Milk and Meat from Animals affected with Tuberculosis,*" is repealed and the following substituted therefor:

(3) Whenever a medical health officer from his own knowledge, or from information received from a veterinary surgeon or other qualified person, has reason to believe that any animal, or the meat or milk of any animal, is affected with any contagious or infectious disease named in section 2 of *The Animal Contagious Diseases Act*, chapter 69 of the Revised Statutes of Canada, 1886, or with the disease known as wens, elyers, actinomycosis or osteosarcoma, he may take action as provided under sub-section 1 of this section.

3. Whereas it may be desirable in the interest of the public health, that there should be instituted a system of health inspection more thorough than is at present practicable owing to the expense attendant upon the appointment of an active and efficient medical health officer for every municipality, any county council may appoint one or more county or district medical health officers.

4. Where a county council appoints a county health officer or officers, the powers now possessed by medical health officers within the county or portion of a county for which such county health officer is appointed, shall be deemed to be thereby transferred to and vested in such county health officer or officers, and all sanitary inspectors within the jurisdiction to be defined in the by-law appointing a county health officer, shall be subject to his direction and control.

5. The Lieutenant-Governor in Council may from time to time appoint district health officers for any unorganized district in the Province or any part thereof; and every health officer so appointed shall within the district or within the portion of a district for which he is appointed, have all the powers and perform all the duties by this Act, or *The Public Health Act*, or any other Act, conferred or imposed upon medical health officers or local boards of health in the Province, and shall also perform such other duties as the Lieutenant-Governor in Council may from time to time direct.

6. The by-law or Order in Council appointing a county or district health officer shall provide for the payment of a salary to the officer so appointed.

The following section was attached to the Bill, but was withdrawn at the third reading of the Bill.

7.—(1) Section 30 of *The Public Health Act* is amended as follows:—That after the words, in connection with said system," the following be inserted; together with an analysis of the wat proposed source or sources of supply, and with a sworn statement, or an affidavit stating tha analysed is taken from the source intended for public use, and that the analysis submitted to th exactly represents the condition of the sample examined.

(2) That section 30, sub-section 2, be amended by the addition of the following words :—"In case the source of any proposed public water supply does not in the opinion of the Provincial Board, meet the sanitary requirements of the inhabitants of the municipality, either by reason of the quality of the water, or because of its liability, owing to the location of the source of supply to become contaminated, it shall not be legal to establish such water-works system until it shall have been proved to the satisfaction of the Provincial Board, that the source is the best practicable, and that all proper measures have been taken to maintain such supply in the highest possible state of purity."

How important it is that public water supplies be provided which shall be secure from dangerous contamination has been illustrated by occurrences in many countries, and to some extent in Ontario. The past year has seen the metropolitan city of Toronto agitated to an unusual degree through a very general distrust in the purity of its water supply obtained from a source long thought to be beyond any possibility of pollution. The remarkable growth of the city, and the enormous increase in the sewage and other polluting agencies incident to the aggregation of population, have created conditions which seriously tax the city's resources, both scientific and financial, to effectively deal with these increasing dangers. Similarly in the city of Ottawa, situated on a river of magnificent proportions, has been illustrated the paramount necessity of having a water supply obtained from sources, which, pure in themselves, shall be protected from polluting causes whether situated within the control of such municipality, or outside of its boundaries. The provisions made in the Public Health Act of 1884, for the supervision by the provincial board of the proposed public water supplies, and of sewerage systems, have been an important element in aiding municipalities in these matters ; but various incidents have shown that existing statutory provisions require amendment in the direction contemplated by the amendment contained in proposed section 7 of the Bill.

The increased knowledge of the causes of disease, and the undoubted spread of zymotics of the class, favored in the rapid development of stock farming, by the housing of cattle, and by their aggregation in large herds, indicate very clearly that close attention must be given to all measures of a sanitary character, tending to eliminate from amongst animals for human food those which, diseased, are unwholesome as food for man, and which form centres from which disease is propagated. Actinomycosis, a disease as yet comparatively rare, and whose nature has but recently been elucidated, belongs to this class, and many communications to the board during the past year have shown that specific enactments are demanded, if its presence amongst the cattle of the province, and its spread from them to man is to be removed.

The amendment in clause 2 of Act was asked for since in a recent case before the court, the prosecuting solicitor did not consider any clause of Sec. 99, Cap. 205, R.S.O., 1887, or the general expression of the Canada Statutes therein quoted "any other contagious or infectious disease," sufficient to prosecute under.

The following selected from correspondence indicates the state of affairs :—

A. R. Pyne, Toronto, writes as follows :—

The following is an extract from last month's report of the city's General License Meat Inspector : "I have found eleven cases of osteosarcoma or lump-jaw in cattle. I wish you would confer with the provincial board and ascertain their views in relation thereto. I think there is no doubt but the disease termed osteosarcoma, is really actinomycosis. I intend having a portion of the diseased part in the next case occurring kept for the purpose of making a thorough investigation. Would be pleased to hear from you in reference to the matter."

Dr. Morton, Wellesley Tp., states :—

Our chief concern during the past few months has been fighting actinomycosis, and several animals have been condemned and destroyed. The board of health has just now an action pending in court against a man who slaughtered and sold the meat of one animal so affected. On investigation I find that the disease is much more common than is generally supposed ; and it is to be feared that many of the animals are surreptitiously sold as meat ; for the dealers in beef cattle uniformly reject them.

The Bosanquet Tp. Report states :—

In the month of June on account of a complaint that his cattle were dying of an infectious disease, and that dead bodies were left unburied, I visited the said farm on the 1st concession. We found that only one had died and had been buried. We saw three with tumors on the jaws. The cattle affected were in a healthy condition and in very good order.

exact .The proposed change in the organization of municipal health authorities is a matter Public Hhe provincial board has for several years been closely considering. The amendshow to sontained in the Act, were contemplated some four years ago by your Board, and time them andde the need for some change in the direction indicated only more apparent. The

township inspection of the public schools, useful in the early history of the public school system, served a most useful purpose; but with the expansion of the school system, improved methods became necessary. The same requirements have come to exist in public health work. The problem has come to be: How can we obtain a systematic and effective health inspection compatible with economy and the spirit of our municipal institutions? It is hoped that the scheme proposed by the Board will be found in some degree adequate to the needs of the work. Its permissive character will enable its merits to be fully discussed before its adoption; and with it the Board may fairly hope to obtain such local assistance as will enable it to see carried out in every county, sanitary work in a manner apparently impossible under the present methods. A glance at the annual reports of the local boards shows the repetition from year to year in most instances where any organization at all has existed, of complaints of the same character, such as:—

(1) The non-reporting by physicians and householders, and therefore of the non-isolation and disinfection by local boards, of contagious diseases, as diphtheria.

(2) Evils connected with the construction of school houses as regards ventilation and drainage, care of the water supply, and disposal of excreta of the same, and the spread through schools of contagious diseases through non-reporting of cases, and the too early return to school of children from infected houses. This the Board believes to be the most common of all means of the spread of diphtheria and other diseases of childhood.

(3) Serious nuisances, with most injurious commercial and health results, arising from filthy slaughter houses, from the disposal of the refuse from cheese factories and creameries, but notably from the disposal of whey either in small streams, from which cattle drink, or in tanks, whence hundreds of hogs are fed, crowded together on premises of limited size, and making the air both around the cheese factory and for all persons living within a mile of such piggeries, positively unwholesome, and most hurtful to the cheese products.

(4) The inspection of contagious diseases of animals, as tuberculosis, actinomycosis, flour moth pest and other diseases already too prevalent.

The scheme briefly stated would be carried out for the purpose of systematically inspecting and preventing or minimizing the evils already referred to; and is illustrated in some measure by systematic work carried on by county inspectors of schools. When adopted its details would be found to work out best by the appointment of a county medical officer of health. A scheme carried into effect such as is provided for in the recent local government bill of England and Wales, would have as subordinate officers, the the sanitary inspectors now existing in many townships, and doing mostly nominal work. The many insuperable difficulties attaching to the position of any local physician of a village or township, who, accepting as honorary, the position of Medical Health Officer, is expected to perform often disagreeable duties, are too well appreciated to need comment. As a county medical health officer would be a permanent appointment, he would be able to make himself competent in the various branches of his work, and would hence be of the greatest assistance to the county school inspectors, to the dairy and creamery associations, and to the sanitary inspectors of townships, and the smaller towns and villages in giving direction and effectiveness to their work.

## II.—THE ECONOMICS OF PUBLIC HEALTH WORK.

Accepted generally as the teachings of Chadwick, Dr. Farr and others have been, regarding not only the monetary value of an individual life to the state, but also of the immense saving of wealth from the lessening of sickness and mortality, it is of interest that these facts should be kept prominently before legislators and the public, both to supply reasons for improvements in sanitary law, and for expenditures necessary to public health work being ungrudgingly supplied.

Edwin Chadwick has applied the story of the Russian fruit peddlers, who, as they sold a portion of a bag of fruit, were accustomed to balance the partially emptied bag over the donkey's back by adding stones to equalize the unsold fruit, instead of shifting the

fruit so that it might balance itself and thereby relieve the beast of the burden, to illustrating the tendency of certain persons to say that whatever gains may have been had in the lessening of the general mortality are neutralized by the increase of some other misfortune. Undoubtedly there may be some element of truth in Carlyle's words when he says : "All life is a disease, action from passion," but that the great mass of the community gains in happiness by an increase in the general health may be accepted as undoubted.

Before quoting some figures just published by Dr. T. Orme Dudfield, in his annual report for the Kensington district of London, England, it is of interest to recall some published years ago by Chadwick.

Thus, the duration of life according to Mr. Finlaison, a government actuary, in 1825 as compared with 1725, was as 4 to 3, or in other words showed an increase of 25 per cent. Baron Delessert, the founder of the philanthropic society of Paris, has pointed out that in the age of chivalry, the fourteenth century, the annual death-rate was 1 in 16 to 17. During the seventeenth century it was 1 in 25 to 26. In 1824 it was 1 in 32.

Some fifty years have passed since public health work actually began in England, and it is indeed gratifying to quote the following statistics of Dr. Dudfield.

The Metropolis Management Act was passed in 1855, and has since been supplemented by various enactments. He says :—"The statistics at my command go back to 1841, and I find that in the three quinquennial periods, 1841-5, 1846-50, 1851-5, respectively, the death-rate in London was 24.2, 25.4 and 24.8 per 1,000 persons living, or for the fifteen years prior to the passing of the Metropolis Management Act, 1855, 24.8 per 1,000. In the following fifteen years, 1856-70, the rate had fallen to 23.9, the rate in the three five-yearly periods being, in 1856-60, 22.7 ; in 1861-5, 24.4, and in 1866-70, 24.3 In the next fifteen years, 1871-85, the average rate fell to 21.3 per 1,000 ; the rate in the three quinquennial periods being, 1871-5, 22.9 ; in 1876-80, 22.2, and in 1881-5, 20.7. In 1886 the death-rate was 19.9, in 1887, 19.6, in 1888 it further fell to 18.5, and in 1889 it was only 17.4, the lowest rate recorded since the present system of civil administration began. It is almost needless to observe that this remarkable decline implies the saving of many thousand lives, to say nothing of illnesses prevented."

Regarding the Kensington portion of London, a district which has enormously extended its growth during the past twenty years, and which now has a population estimated at 178,000, or is practically a city of the same size as Toronto, and has grown up practically during the same fifty years, we find the following interesting statistics. Says Dudfield :—"It is not in my power to furnish a similar return, showing the results of the administration of the acts in this parish ; there are no statistics for the period antecedent to 1856, and the figures relating to 1856-60 are not reliable. But the statistics for subsequent years may be trusted, and these years may be grouped for comparison into quinquennial periods. The death-rate, then, in the five years 1861-5 was 20.3 per 1,000 persons living, that in 1866-70 being 20.2 per 1,000. In 1871, upon my appointment, a more vigorous sanitary administration was organized by your vestry, which soon began to produce good results, for in the quinquennium, 1871-5, the death-rate fell to 18.9, and in the next five years, 1876-80, to 18.7. A still larger decline was observed in the quinquennium, 1881-5, the death-rate in those years being 15.9 per 1,000 only. If to those years we add 1886-7 it will appear that the death-rate in the septennial period, 1881-7, was 16.1 per 1,000. In 1888 the rate was 15.9, and in 1889, 13.5 only, the lowest on record. In Kensington as in London, an eminently satisfactory improvement in the public health has taken place in regard to "preventable" diseases, *i.e.*, diseases of the zymotic class. The improvement has been largely due to the legislation of 1866, (the Sanitary Act), and in 1867, (the Metropolitan Poor Act), the metropolis having been endowed under the last-named Act with a magnificent system of hospitals for infectious diseases, organized by the Metropolitan Asylums Board, whilst under the former Act public health has been safe-guarded by provisions for preventing the spread of infectious diseases by exposure of the sick, etc., and for disinfection, etc. For purposes of comparison I give the Kensington statistics for 1889. Estimated population, 178,000; death-rate, 13.5 ; birth-rate, 20.8 ; zymotic rate, 1.5 ; rateable value, £1,900,000."

It will not be devoid of interest to institute a comparison between Kensington and some Ontario cities, whose statistics may be considered as fairly reliable.

DEATHS from four of the zymotic diseases, together with total deaths from all causes and ratio per 1,000 of population during 1890.

| — | JANUARY. | | | | FEBRUARY. | | | | MARCH. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | — | — | Total deaths. | Ratio per 1,000 of population. | — | — | Total deaths. | Ratio per 1,000 of population. | — | — | Total deaths. | Ratio per 1,000 of population. |
| Toronto | Diphtheria | .. | 310 | 1.74 | D | .. | 241 | 1.35 | D | 3 | 262 | 1.47 |
| | Scarlet Fever | 3 | | | S. F | 1 | | | S. F | .. | | |
| | Typhoid | 6 | | | T | 5 | | | T | 4 | | |
| | Measles | 3 | | | M | 1 | | | M | 6 | | |
| Hamilton | Diphtheria | .. | 93 | 2.06 | D | 1 | 69 | 1.53 | D | .. | 60 | 1.33 |
| | Scarlet Fever | 1 | | | S. F | .. | | | S. F | 3 | | |
| | Typhoid | .. | | | T | .. | | | T | 3 | | |
| | Measles | .. | | | M | .. | | | M | .. | | |
| Ottawa | Diphtheria | .. | 102 | 2.31 | D | 2 | 77 | 1.75 | D | 4 | 64 | 1.45 |
| | Scarlet Fever | .. | | | S. F | .. | | | S. F | 1 | | |
| | Typhoid | 2 | | | T | .. | | | T | .. | | |
| | Measles | .. | | | M | .. | | | M | 1 | | |
| Brantford | Diphtheria | 1 | 27 | 2.03 | D | .. | 18 | 1.35 | D | .. | 15 | 1.12 |
| | Scarlet Fever | .. | | | S. F | .. | | | S. F | .. | | |
| | Typhoid | 1 | | | T | 2 | | | T | 2 | | |
| | Measles | .. | | | M | .. | | | M | .. | | |
| Guelph | Diphtheria | 1 | 20 | 1.90 | D | .. | 12 | 1.14 | D | 1 | 7 | .66 |
| | Scarlet Fever | .. | | | S. F | 1 | | | S. F | .. | | |
| | Typhoid | .. | | | T | .. | | | T | .. | | |
| | Measles | 2 | | | M | 1 | | | M | 1 | | |
| Brockville | Diphtheria | .. | 27 | 3.03 | D | .. | 10 | 1.12 | D | .. | 15 | 1.68 |
| | Scarlet Fever | .. | | | S. F | 1 | | | S. F | .. | | |
| | Typhoid | .. | | | T | .. | | | T | .. | | |
| | Measles | .. | | | M | .. | | | M | .. | | |

DEATHS from four of the zymotic diseases, together with total deaths from all causes and ratio per 1,000 of population.—*Continued.*

| — | APRIL. | | | | MAY. | | | | JUNE. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | — | — | Total deaths. | Ratio per 1,000 of population. | — | — | Total deaths. | Ratio per 1,000 of population. | — | — | Total deaths. | Ratio per 1,000 of population. |
| Toronto | Diphtheria | 6 | 270 | 1.51 | D | 3 | 239 | 1.34 | D | 3 | 179 | 1.00 |
| | Scarlet Fever | .. | | | S. F | 2 | | | S. F | 1 | | |
| | Typhoid | 2 | | | T | 12 | | | T | 3 | | |
| | Measles | 1 | | | M | 1 | | | M | 1 | | |
| Hamilton | Diphtheria | .. | 70 | 1.55 | D | 1 | 90 | 2.00 | D | 1 | 80 | 1.77 |
| | Scarlet Fever | 1 | | | S. F | .. | | | S. F | 1 | | |
| | Typhoid | .. | | | T | 2 | | | T | 2 | | |
| | Measles | 4 | | | M | 1 | | | M | .. | | |
| Ottawa | Diphtheria | 2 | 76 | 1.72 | D | 3 | 91 | 2.06 | D | 2 | 74 | 1.68 |
| | Scarlet Fever | 1 | | | S. F | .. | | | S. F | .. | | |
| | Typhoid | .. | | | T | .. | | | T | .. | | |
| | Measles | .. | | | M | .. | | | M | 2 | | |
| Brantford | Diphtheria | 1 | 14 | 1.05 | D | .. | 14 | 1.05 | D | .. | 10 | .75 |
| | Scarlet Fever | .. | | | S. F | .. | | | S. F | .. | | |
| | Typhoid | .. | | | T | .. | | | T | .. | | |
| | Measles | .. | | | M | .. | | | M | 1 | | |
| Guelph | Diphtheria | .. | 8 | .76 | D | .. | 15 | 1.42 | D | .. | 10 | .95 |
| | Scarlet Fever | .. | | | S. F | .. | | | S. F | .. | | |
| | Typhoid | .. | | | T | .. | | | T | .. | | |
| | Measles | .. | | | M | .. | | | M | .. | | |
| Brockville | Diphtheria | 1 | 16 | 1.80 | D | .. | 9 | 1.01 | D | .. | 12 | 1.35 |
| | Scarlet Fever | .. | | | S. F | .. | | | S. F | .. | | |
| | Typhoid | .. | | | T | .. | | | T | .. | | |
| | Measles | .. | | | M | .. | | | M | .. | | |

DEATHS from four of the zymotic diseases, together with total deaths from all causes and ratio per 1,000 of population.—*Continued.*

| | JULY. | | | | AUGUST. | | | | SEPTEMBER. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | — | — | Total deaths. | Ratio per 1,000 of population. | — | — | Total deaths. | Ratio per 1,000 of population. | — | — | Total deaths. | Ratio per 1,000 of population. |
| Toronto | Diphtheria | 10 | 247 | 1.38 | D | 10 | 305 | 1.71 | D | 7 | 218 | 1.22 |
| | Scarlet Fever | 2 | | | S. F. | .. | | | S. F. | .. | | |
| | Typhoid | 7 | | | T | 13 | | | T | 19 | | |
| | Measles | 1 | | | M | 1 | | | M | 1 | | |
| Hamilton | Diphtheria | .. | 83 | 1.84 | D | 1 | 88 | 1.95 | D | 1 | 64 | 1.42 |
| | Scarlet Fever | .. | | | S. F. | .. | | | S. F. | .. | | |
| | Typhoid | 3 | | | T | 2 | | | T | 2 | | |
| | Measles | . | | | M | .. | | | M | .. | | |
| Ottawa | Diphtheria | 4 | 124 | 2.81 | D | 1 | 82 | 1.86 | D | 4 | 90 | 2.04 |
| | Scarlet Fever | .. | | | S. F. | .. | | | S. F. | 2 | | |
| | Typhoid | .. | | | T | .. | | | T | 5 | | |
| | Measles | .. | | | M | .. | | | M | .. | | |
| Brantford | Diphtheria | . | 21 | 1.47 | D | . | 20 | 1.40 | D | .. | 15 | 1.05 |
| | Scarlet Fever | .. | | | S. F. | .. | | | S. F. | .. | | |
| | Typhoid | .. | | | T | .. | | | T | 3 | | |
| | Measles | .. | | | M | .. | | | M | .. | | |
| Guelph | Diphtheria | 1 | 12 | 1.13 | D | 3 | 17 | 1.61 | D | 3 | 13 | 1.23 |
| | Scarlet Fever | .. | | | S. F. | .. | | | S. F. | .. | | |
| | Typhoid | .. | | | T | 1 | | | T | .. | | |
| | Measles | .. | | | M | .. | | | M | .. | | |
| Brockville | Diphtheria | .. | 17 | 1.91 | D | . | 15 | 1.68 | D | .. | 10 | 1.12 |
| | Scarlet Fever | 1 | | | S. F. | 1 | | | S. F. | .. | | |
| | Typhoid | .. | | | T | .. | | | T | 1 | | |
| | Measles | .. | | | M | .. | | | M | .. | | |

Deaths from four of the zymotic diseases, together with total deaths from all cause and ratio per 1,000 of population.—*Continued.*

| | October. | | | | November. | | | | December. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | — | — | Total deaths. | Ratio per 1,000 of population. | — | — | Total deaths. | Ratio per 1,000 of population. | — | — | Total deaths. | Ratio per 1,000 of population. |
| Toronto ... | Diphtheria ..... | 9 | 204 | 1.14 | D..... | 15 | 203 | 1.14 | D..... | 13 | 241 | 1.35 |
| | Scarlet Fever..... | 1 | | | S. F.... | 2 | | | S. F... | 2 | | |
| | Typhoid ..... | 15 | | | T ..... | 16 | | | T ..... | 15 | | |
| | Measles .. .. .... | .. | | | M..... | .. | | | M..... | 2 | | |
| Hamilton .... | Diphtheria . ..... | 1 | 50 | 1.11 | D..... | 2 | 58 | 1.28 | D..... | 1 | 61 | 1.35 |
| | Scarlet Fever..... | .. | | | S. F.... | .. | | | S. F.... | .. | | |
| | Typhoid ..... | 4 | | | T ..... | 3 | | | T ..... | 2 | | |
| | Measles ..... .... | .. | | | M..... | .. | | | M..... | .. | | |
| Ottawa..... | Diphtheria ..... | 2 | 56 | 1.27 | D..... | .. | 54 | 1.22 | D..... | 8 | 58 | 1.31 |
| | Scarlet Fever..... | .. | | | S. F.... | .. | | | S. F.... | 1 | | |
| | Typhoid ..... | 7 | | | T ..... | 5 | | | T ..... | .. | | |
| | Measles ..... | .. | | | M..... | 1 | | | M..... | .. | | |
| Brantford .... | Diphtheria ..... | .. | 13 | .91 | D..... | 3 | 12 | .84 | D.. .. | .. | 12 | .84 |
| | Scarlet Fever..... | .. | | | S. F.... | .. | | | S. F.... | .. | | |
| | Typhoid ..... | 2 | | | T ..... | 1 | | | T ..... | .. | | |
| | Measles ..... | .. | | | M..... | .. | | | M..... | .. | | |
| Guelph..... | Diphtheria ..... | 1 | 11 | 1.04 | D..... | .. | 6 | .56 | D..... | .. | 11 | 1.04 |
| | Scarlet Fever..... | .. | | | S. F.... | .. | | | S. F.... | .. | | |
| | Typhoid ..... | 1 | | | T ..... | 1 | | | T ..... | .. | | |
| | Measles ..... | .. | | | M..... | .. | | | M..... | .. | | |
| Brockville.... | Diphtheria ..... | .. | 8 | .90 | D..... | .. | 7 | .78 | D..... | 1 | 13 | 1.46 |
| | Scarlet Fever..... | .. | | | S. F.... | 1 | | | S. F.... | .. | | |
| | Typhoid ..... | .. | | | T ..... | .. | | | T ..... | .. | | |
| | Measles ..... | .. | | | M..... | .. | | | M..... | .. | | |

Deaths from four of the zymotic diseases, together with total deaths from all causes and ratio per 1,000 of population.

| | Total deaths for the year. | Ratio per 1,000 of population. | Population. |
|---|---|---|---|
| Toronto | 2,919 | 16.39 | 178,000 |
| Hamilton | 866 | 19.24 | 45,000 |
| Ottawa | 948 | 21.54 | 44,000 |
| Brantford | 191 | 14.36 | 13,300 |
| Guelph | 142 | 13.49 | 10,522 |
| Brockville | 159 | 17.88 | 8,887 |

These tables as compared with previous years are in most instances extremely satisfactory; and in no disease more than in diphtheria, high as the mortality has been compared with England. Many of the conditions promoting its causation have not disappeared, but there is abundant evidence gained from its lessened mortality as well as from the reports of local boards, that isolation and disinfectant precautions regarding it, as well as more modern methods of treating it, are being generally adopted. Nothing can be more illustrative of the advance in municipal sanitation, in addition to the above facts, than the following statistics of disease and of the construction of public works:—

Deaths from Small-pox in Ontario.

| Year. | Deaths. | No. Counties where outbreaks occurred. |
|---|---|---|
| 1872 | 187 | 29 |
| 1873 | 72 | ..... |
| 1874 | 112 | ..... |
| 1883 | 1 | ..... |
| 1884 | 62 | 7 |
| (Year of Montreal epidemic) 1885 | 21 | 7 |
| (Mostly in counties along the Ottawa and adjoining Quebec) 1886 | 3 | 4 |
| (No outbreak) 1887 | ..... | ..... |
| (Year Buffalo outbreak. All grew out of Buffalo except one) 1888 | 3 | 6 |
| (Grew out of Buffalo epidemic) 1889 | 13 | 2 |
| (Not a single outbreak) 1890 | ..... | ..... |

Of water-works systems for public purposes in Ontario there are in all 53, including cities, towns and villages.

Of these there were in existence in 1882 9 systems in operation. There have been 35 systems constructed since 1882 and 9 are at present under construction.

Of systems of sewerage, there were nine in operation in 1882, some of which have since been greatly extended. Eight systems have been constructed since 1882 and 7 are under construction at present.

Such evidence is conclusive of the hold which sanitation has on Ontario municipalities, and were more needed it is to be found in the attention which is being given to the limitation of other disease producing agencies, as infected foods and drinks, as milk and meat. That there is an enormous loss through sickness, which is largely avoidable, may be gathered from the continued prevalence of phthisis, as will be seen from the following tables :—

| — | 1882. | | 1883. | | 1884. | | 1885. | | 1886. | | 1887. | | 1888. | | 1889. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number of deaths. | Per cent. of all deaths. | Number of deaths. | Per cent. of all deaths. | Number of deaths. | Per cent. of all deaths. | Number of deaths. | Per cent. of all deaths. | Number of deaths. | Per cent. of all deaths. | Number of deaths. | Per cent. of all deaths. | Number of deaths. | Per cent. of all deaths. | Number of deaths. | Per cent. of all deaths. |
| Diphtheria | 1239 | 5.8 | 709 | 3.5 | 668 | 3.1 | 1006 | 4.7 | 1406 | 6.2 | 1340 | 5.7 | 1088 | 4.1 | 801 | 3.4 |
| Typhoid | 555 | 2.6 | 469 | 2.2 | (Not among the ten highest causes of death). | | | | | | | | | | | |
| Phthisis | 2464 | 11.6 | 2500 | 12 3 | 2347 | 11.1 | 2313 | 10.8 | 2419 | 10.8 | 2556 | 10.9 | 2521 | 10.6 | 2417 | 10.3 |

How great is the loss due to this world-wide pest may best be considered when the lingering character of the disease is taken into consideration. If this, the greatest of all foes in temperate climates, and that which is most productive of loss to the family and the community, is to be limited, its sources must be more carefully recognised and means for their prevention adopted. The sanitation of the home, the school and the workshop must be improved and the high-pressure life which the present age tends to produce by which resistance to disease is so materially lessened must be notably altered if our end is to be attained.

## III. THE HEALTH OF PUBLIC SCHOOLS.

Attention has from time to time been given to this subject by public spirited physicians, and of recent years the health of school children has been enquired into especially with regard to the eye-sight. The attention of school trustees has been called to the necessity for improvement in the construction of school buildings ; and in Ontario the Provincial Board of Health has paid much attention to the various matters affecting the health of school children. It has published pamphlets on the subject, and has even written a manual on School Hygiene. The Education Department too, has not been unmindful of supplying a practical guide to school architecture, since it has published a work for distribution on this important subject. In view of these facts it is however regrettable to learn how slow the trustees are to appreciate the unsanitary condition of many schools, and how slow the School Inspectors are to insist on improvements. It is perhaps too much to expect that they would require the dismantling of buildings unfit for human habitation, in some instances where sections are poor ; but they ought at least to insist that a close supervision be maintained, by both teachers and trustees on the cleanliness of the school and its surroundings. The outhouses and drinking water are naturally the most likely to receive their attention ; but there can be little doubt that the filth which is introduced and accumulated within the building is a larger factor in creating certain disorders, than those external to the building.

Speaking of these in detail we would observe the totally inadequate provision for maintaining a supply of fresh air in the school. Ventilation where present at all, as may be seen in the following abstracts from Inspectors' reports, is of a crude and very unperfect character.

The Prescott and Russell report states :—

"I am sorry to have to report a general negligence in the care of the school grounds which are undrained, and as a consequence unplanted. In but few instances is there a supply of water on the premises, and the outbuildings are hardly kept in proper condition."

The Parry Sound report says :—

"About the beginning of the year the schools in the north-east part of the District suffered some disturbance from a violent outbreak of diphtheria. As a consequence the schools in all these parts had to be closed for a time. However, through the prompt and decisive measures adopted by the Government the malady was soon circumscribed and ultimately stamped out, so that the schools were enabled to resume work again by the end of the first half-year."

The City of London report says :—

"Our school houses are beginning to show a little more of the spirit of the age in which we live. Hitherto our school-houses were pest houses better calculated to generate and spread contagious and infectious diseases than to promote the mental and moral training of the rising generation. Until a comparatively recent date we had not a single school in the city adapted to the work for which it was designed and fitted, in a sanitary point of view, to promote the health and comfort of the children with which they were packed. In many cases the crowding was excessive, the ventilation defective, the light dangerous to the eyes, and the atmosphere highly deleterious to the health of the children. Let the people consider the condition of that old Central school-house, originally designed for six class-rooms and now divided into twelve, having the children huddled together in less than half the space the law demands, the teacher's platform, a mere strip, bringing the teacher within a few feet of his class, and in eight out of the twelve rooms having about one-fourth of the area of the blackboard required, and they will hardly be so thoughtless or so cruel to their children as to condemn this noble effort on the part of the Board of Education to mitigate this suffering on the part of the innocent children, and secure more sanitary conditions for both teachers and pupils. Let me ask those parents who gave their vote in condemnation of this action of the Trustees, by which one class room in Waterloo South into which one hundred and fifty pupils were crammed, and another in Horton Street very little better, were relieved, and the little sufferers removed to pleasant, roomy, well-ventilated quarters, provided with every requisite for health and study and development of mind and body. Was this action right or wrong? Was it in the way of progress or the reverse? Was it calculated to promote the work of education among us and secure to our children, so far, a sound mind n a sound body?"

J. F. White, Separate School Inspector Western Division, reports :—

"Though some improvement has been made in the matter of ventilation, there is yet room for a very great advance in the majority of cases."

*Re* a school in South Grey, the Inspector says :—

"Not only is the room too small, and the ceiling too low, but the walls, furniture, etc., appear dirty and forbidding in the extreme."

The Haliburton report says :—

"We are intending to provide better school accommodation.'

The Halton report says :—

"Two buildings unfit for occupation, have been improved.'

The Hastings North report says :—

"A great number of our schools are badly ventilated. My efforts to secure improvements have not been successful in old buildings. New buildings have sashes with pulleys."

The Hastings South report states :—

"50 school houses built in 18 years. No complaint about ventilation."

The Kent East report says :—

"The old dilapidated buildings have disappeared and new ones, mostly in good repair exist.'

F. L. Mitchell, Inspector, reports for Lanark :—

"Through the efforts of the Provincial and Local Boards of Health, more attention has been directed to this important (sanitary) matter. However, I still find much difficulty in enforcing the Regulations respecting the cleaning of schools premises, disinfection and regular cleaning of closets, supply of wholesome drinking water, and other matters of vital importance to the physical and æsthetic education of our youth. The ravages of diphtheria and typhoid fever may be avoided by due care to cleanliness of school and premises. The unprejudiced visitor to many of our Canadian schools must lament the fact that progress in these directions has not been apace with that of the intellectual side of our educational system."

The inspector for London has described the actual state of affairs, which has existed, and which to some extent does still exist, so perfectly that nothing more is needed to describe too common conditions. Others state that improvements are in progress, and it is gratifying to note the recognition, as by Mr. Mitchell of Lanark, of the good work being done by health boards, provincial and local, in inspecting and causing improvements in the sanitary surroundings to be made. The following abstracts from the Annual Reports of Local Boards of Health illustrate the work which here and there is done by them.

*Brockville.*

The schools have been thoroughly inspected during the year and were never in a better state of sanitation. Owing to isolation of infectious diseases no serious epidemic among school children has occurred.

*Port Arthur.*

Inspection of schools made by the medical health officer and everything found in good order.

*Norwood.*

The school buildings were examined and found in a sanitary condition.

*Blanshard Township.*

There has been a marked improvement in the school sections of the township. More attention has been paid to drainage, ventilation, water supply for drinking purposes, and cleanliness of water closets.

*Harwich Township.*

The medical health officer finds on inspection that the water used is impure at a number of the schools, and attributed to it cases of diphtheria.

*Hay Township.*

The sanitary inspector reports the schools in a fairly good sanitary condition. The trustees are recommended to look after the water supply of schools.

*Mariposa Township.*

Inspection of school houses, yards and wells has been carefully attended to.

*McKillop Township.*

The schools of the township have been inspected as well as an examination of the wells.

*Matchedash Township.*

The schools are reported in a good sanitary condition.

*Wilmot Township.*

The medical health officer called into several schools to ascertain the existence of scabies.

*Woolwich Township.*

The medical health officer reports all the school premises clean. At one school he found the water bad.

But much more is needed than this. To ventilate a school at all properly it must be properly heated. During the winter the schools, notably in rural districts, are most largely attended, and the building is closed up most completely. How often the old stove placed in the middle of the room is responsible for colds and sore throats through unequal distribution of its heat, it would be hard to say ; but how it is possible that fresh air can be introduced by such a method cannot well be conceived. The air becomes of necessity loaded with dust containing organic particles, and with animal emanations from the body and breath of pupils which in excess is positively poisonous. But should there

be a child or children coming from houses, often unclean, where infectious disease, as scarlatina or diphtheria exists, the particles of infection clinging to their woollen clothing will dry and be brushed off, and being borne along in the dust, become a medium of infection for often a large proportion of those in the same school room.

The steps necessary to be taken in extreme instances by health boards and the results of prompt action are seen in the report of the inspector for Parry Sound already quoted.

It would be well if medical health officers and members of local boards everywhere would realize how great and complete are the powers *re* schools placed in their hands under the Public Health Act, as seen by section 94 of the Act.

"Whenever a case of smallpox, cholera, scarlatina, diphtheria, whooping cough, measles, mumps, glanders, or other contagious disease exists in any house or household belonging to which are persons attending school, the householder shall within eighteen hours of the time such disease is known to exist notify the head teacher of such school or schools and also the secretary of the local board of health of the existence of such disease, and no member of such household shall attend school until a certificate has been obtained from the medical health officer or legally qualified practitioner, that infection no longer exists in the house and that the sick person, house, clothing and other effects have been disinfected to his satisfaction, and until such certificate shall have been obtained it shall be the duty of every member of the household, and of the teacher, to use all reasonable efforts to prevent the association of members of the said household with other children.

(2) Whenever the local board of health or any of its officers or members know of the existence in any house of smallpox, cholera, scarlatina, diphtheria, whooping cough, measles, mumps, glanders, or other contagious disease, they shall at once notify the head or other master of the school or schools at which any member of the household is in attendance, and should it not be evident that said member has not been exposed to said diseases, or any of them, the teacher must forthwith prevent such further attendance until the several members present a certificate stating that infection no longer exists, as provided in the preceding sub-section.

(3) Whenever a teacher in any school has reason to suspect that any pupil has, or that there exists in the home of any pupil any of the above mentioned diseases he shall be required to notify the medical health officer, or where none exists the local board of health on forms supplied by the school authorities, in order that evidence may be had of the truthfulness of the report, and he shall further be required to prevent the attendance of said pupil or pupils until medical evidence of the falsity of the report has been obtained." 50 V. c. 34, s. 1.

In addition to these dangers from acute infectious diseases, much attention is within very recent years being given to the dangers of disseminating tuberculosis amongst school children and school teachers. It has long been noticed that female teachers are more than ordinarily subject to consumption, the death-rate from this disease in English schools amongst mistresses having been estimated as being over 20 in the 1,000; but it must be remembered that most of these have been successively pupils and teachers, subject to the double dangers of over-study with its sedentary habits and to the bad air of the school-room. The imperfectly ventilated school as regards the number of bacteria in the air is illustrated in an interesting manner from published experiments by Prof. Carnelley, of Dundee. While it is true that pulmonary consumption in the children of Canada is not common in rural schools, yet with the increasing population of our large cities a certain degree of danger from this source must be expected. The disease must be expected to occur with some degree of frequency amongst teachers, and it becomes the duty of trustees to in no case allow a false sympathy to expose children under such circumstances. The only condition of real safety will be found in maintaining the closest supervision of the various sanitary details which enter into the school life of that portion of the population of Ontario, which amounts to nearly half a million, (434,299 in 1890) or nearly twenty-five per cent. of the inhabitants of the Province.

## IV. SEWAGE DISPOSAL.

The past year has shown in this field much development. Nothing has proved this more than the comprehensiveness of the papers, and the range of the discussions on the subject of sewage disposal at the annual meeting of the Executive Health Officers of Ontario, held in

Owen Sound in August last. So important did it appear to the gentlemen who have difficult questions to deal with in their own municipalities, or where their territory is affected by sewage borne by rivers and streams, that a special committee was appointed to deal with the matter. The unanimous opinion expressed at such meeting was that the public health was to be best conserved by the enforcement of that clause in the public health which forbids the pollution of streams.

*Section 30 of the Public Health Act.*

(1) Whenever the establishment of a public water supply or system of sewerage shall be contemplated by the council of any city, town or village, it shall be the duty of the said council to place itself in communication with the provincial board of health, and to submit to the said board, before their adoption, all plans in connection with said system.

(2) It shall be the duty of the provincial board of health to report whether, in its opinion, the said system is calculated to meet the sanitary requirements of the inhabitants of the said municipality; whether any of its provisions are likely to prove prejudical to the health of any of the said inhabitants, together with any suggestions which it may deem advisable; and to cause copies of said report to be transmitted to the minister of the department to which the said provincial board of health is attached, and to the clerk of the municipal council, and the secretary of the local board of health of the district interested.

(3) No sewer or appliance for the ventilation of the same shall be constructed in violation of any of the principles laid down by the provincial board of health, subject to appeal to the Lieutenant-Governor in Council. 47 V. c. 38, s. 38.

Manifestly then it is made an easier task for your Board to carry out in those instances where plans of sewerage are submitted for approval, the intention of the Act, which manifestly is against pollution, where there is any danger to public water supplies. These conclusions, however, imply for all of our Canadian cities from the financial standpoint, the adoption of the *separate* system of sewerage, or some modification of it. Its principles are so well understood that they need not be adverted to at length here, since they are entered into in some detail in the report for 1888.

That there is a manifest development of this method in Canada we have abundant evidence to show.

In a recent paper by Mr. Alan MacDougall, C.E,, on "Sewerage and water-works of St. John's, Newfoundland," the tendency in the direction of separate sewers is well illustrated.

The paper says, referring to existing sewers of the town :—

The natural water course which intersected the city became in course of time more or less polluted by sewage. Large stone drains or culverts, rectangular in section, were built from time to time on the lines of the water courses, consequently they are crooked, and in too many instances situated on private property. In later years the Government, through its Board of Works, constructed a number of sewers, varying from 12 to 24 inches in diameter, without regard to any systematic plan. The pollution of the water front of the harbor and the necessities of life demanded a better arrangement. Messrs. Kinipple and Morris, M.M. Inst. C.E. of London, were again consulted, and prepared plans for a system of sewerage at a point in the eastern end of the harbor, and either discharge it there at the level of half tide, or raise it by pumping to a higher level and discharge it into the open sea. They strongly recommended the latter course in which they were undoubtedly correct. Two outlets were proposed, one directly into the open ocean, by which plan the works would have cost £80,116 sterling ($390,165); the other at the entrance to the harbor at a rock locally known as the "chain" rock. By this system the works would have cost £74,886 sterling ($364,595). Their scheme proposed 19 miles of sewers. No action appears to have been taken on this report.

Some years after, in 1886, Mr. H. C. Burchell, M. Can. Soc. C.E., the Government engineer, was instructed to report on the sanitary condition of the city, which was followed up by another report from him in February, 1887, on the subject of improved sewerage for the town of St. John's. Mr. Burchell went over the ground very carefully and prepared an exhaustive and valuable report, in which he differed materially from Messrs. Kinipple and Morris and recommended the eparate system, leaving the existing sewers for storm water and surface water sewers. He selected his point of outfall at the chain rock. Under his proposal there were about fourteen and a half miles of sewers, which he estimated to cost $205,875.

In March of 1889, the city consulted Mr. Rudolph Hering, M. Can. Soc. C.E., who prepared the scheme which is now being carried out. He recommended the Rawlinson system of small sewers, the principles of which are well known to the members of the society. He adopted the chain rock as the permanent outfall. Under his directions the city engineer, the late Mr. C. F. Harvey, has worked out the details of the system. There are fifteen and a half miles of sewers contemplated, at a cost of $272,183. Mr. Harvey added $75,100 for improvement of old sewers, culverts, superintendence, storage, etc., otherwise his estimate would not differ materially from Mr. Burchell's.

The report further points out a very interesting fact, showing how with different manners of living, climate and soil conditions, an engineer has, in order to meet the requirements, to adapt his work to local conditions,

Mr. MacDougall under the heading of "Sanitary work" says :

"The writer desires to record his appreciation of the excellent sanitary arrangements which exist. The nature of the subsoil has fortunately prevented the formation and use of privy pits, and compelled some form of removal of night soil. The record of the past is not flattering to the manners of the citizens, but since the present regime has been inaugurated a great change for the better has taken place. The sanitary department has had to deal with the poorer classes who have not the means to introduce water and sewerage into their houses. The apartments which serve as a domicile are from one to three rooms, there is not therefor accommodation for a closet. The custom of the country differs from Canada in the matter of house heating, the principles and practice being much more British than Canadian ; and as a general rule houses are not heated. In the very coldest weather a small hall stove or "heater" tempers the atmosphere of the house, but so far as the writer can learn can hardly be said to heat it. If this condition exists in the houses of the upper classes, it is useless to expect those of the lower to be warmed, therefore, even if water were introduced into their houses, it would certainly freeze.

The writer has had sufficient experience of sanitary work in western cities to know what the condition of drainage in cheap houses leads to, the troubles caused by it, and the dangers to which inmates are subjected. In St. John's he finds a system of water supply from public fountains in full working order, the people accustomed to draw from them, and suffering no inconvenience from the arrangement ; the slops emptied into well-formed and graded side channels which are carefully swept every day, and in numerous streets flushed by the waste water of the fountains ; a daily collection of garbage and a nightly one of night soil. Here everything tends to internal cleanliness of the household, and no danger of dissemination of disease from sewage gas can exist from defective plumbing arrangements. On the other hand there is a certainty that if sewers were led into these houses, and any plumbing fixtures, especially water closets, introduced, there would be bad joints, stoppages, breakages in pipes, and resultant outbreaks of zymotic diseases. He therefore advised the municipal council to give frequent connections to the sewers by means of gullies, placed so as not to intercept surface water, for carrying away household water, to flush the sewers, and to continue the use and daily collection of night soil through the "pail" system."

Experience, however, in Ontario goes to show that in the system of sewers for sewage only, we have given us a method financially possible for any town or village in the Province, while the simplification of the plumbing appliances while maintaining sanitary conditions, makes it possible for every householder, even at the lowest monthly rental, to be provided with house drainage, both for keeping the foundation and cellar dry and for carrying off slop water and kitchen wastes.

In a paper prepared by Mr. W. Chipman, C.E., for the meeting of the Association of Executive Health Officers of Ontario, he has given in a concise form actual working figures of cost, and has as well illustrated by cuts simple forms of appliances, which he recommends for adoption.

He says every resident of a city or town can, and ought to be compelled, in the interests of the public health, to keep his house and premises in as perfect a sanitary condition as possible.

"This may be done :—

(*a*) By removing all liquid wastes daily. These wastes include chamber slops, water used for baths, clothes washing, dish-washing, pot-washing, vegetable-washing, and the thousand and one other uses to which water is put in a house.

(*b*) By deodorizing, disinfecting and removing quietly, periodically, regularly and without offence to any of the senses, all night-soil.

(*c*) By burning all combustible garbage and removing by carts all that is not combustible.

(*d*) By removing ashes periodically.

(*e*) By the continuous removal of the subsoil water that causes damp cellars, basements, etc.

The construction of a system of sewerage in a city or town will tend to lower the subsoil water ; but it will do little more towards improving its sanitary condition unless a great majority of the citizens take advantage of such system and use the sewers as a means of removing all liquid house wastes at least. Until recent years the ordinary house plumbing with enclosed fixtures, sheet-metal pipes, putty joints, bath rooms badly lighted and ventilated, and soil pipes of inferior materials was a continuous source of expense and danger to the inmates of houses so supplied ; design, materials and workmanship were all at fault.

With a system of sewers and proper plumbing fixtures (*a*) and (*b*) can best be removed by the water carriage system, the liquids in (*a*) carrying the solids of (*b*) quietly, quickly and immediately out of the building. There are no sanitary objections to this method. Great objections are, however, raised against house plumbing by the owners of buildings not furnished with plumbing fixtures, the chief being :—

1. The great first cost.
2. The annual charge for water.
3. The pipes and fixtures are looked upon as suspicious neighbors.

It is claimed that the first cost is so great that only the rich can be benefited by the sewer system, especially when the water rate is taken into consideration.

There is at first sight some truth in this claim ; but the liquid house wastes can be conveyed to the sewer system from the poor man's cottage at a very small expenditure for plumbing, and the water rate will not be increased by adopting the suggestions given further on."

The following table is drawn up to show how economical even the completest appliances and fixtures, compatible with health, may be introduced :—

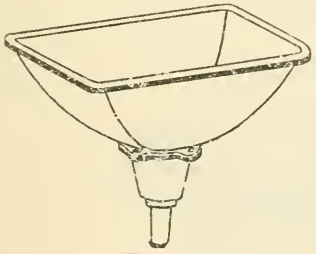
| Economical and efficient removal from different classes of buildings. | Cheapest tenements, monthly rental not exceeding $5.00. | Houses in which the monthly rental does not exceed $12.00. | Houses in which the monthly rental does not exceed $20.00. | Houses in which the monthly rental does not exceed $40.00. |
|---|---|---|---|---|
| (*a*) Liquid house wastes— | | | | |
| 1. Kitchen water (fatty) | Slop sink outside the buildidg. | 1 Kitchen sink. | 1 Kitchen sink. | 1 Sinks. |
| 2. Washing water (soapy) | | 2 " " | 2 " " | 2 Baths, wash-bowls & sink. |
| 3. Chamber slops | | 3 Slop sink outside. | 3 Water closet. | 3 Water closet. |
| (*b*) Night soil | Earth or ash closet. | Earth or ash closet. | Water closet. | Water closets. |
| (*c*) Kitchen garbage | Burned in kitchen stove in whole or in part. | | | |
| (*d*) Ashes | Carted away as often as possible with the refuse that cannot be consumed. | | | |
| (*e*) Subsoil water | Removed by porous agricultural drain tiles. | | | |
| Cost of house sewer | $18 00 | $18 00 | $10 00 | $10 00 |
| " plumbing fixtures | 12 00 | 37 00 | 125 00 | 180 00 |
| Total first cost | $30 00 | $55 00 | $135 00 | $190 00 |

In houses indicated in the second and third columns of the above schedule the annual cost for odorless excavating and for removal of garbage and surplus ashes should not exceed $2.50 per year. In houses of the class mentioned in the last two columns there will be the additional charge for extra water required to flush the water closets, and other fixtures.

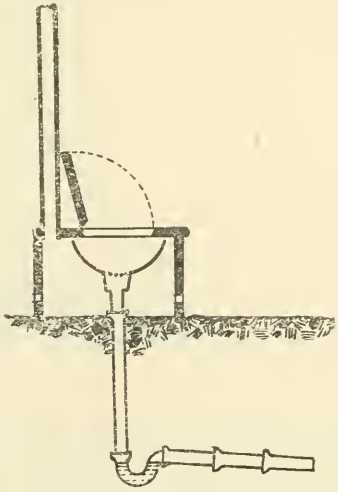
The cost of house sewer does not include the cost of that part of house sewer between the street line and the street sewer.

Following are given cuts and brief descriptions, from the paper, of the various appliances for making the sanitary condition of a town complete :—

The Outside Slop Sink.—This slop sink should be of iron, preferably galvanized, and should have a cast iron outlet pipe 3 inches in diameter furnished with a deep trap of the same diameter placed from 3 to 4 feet below the surface of the ground (beyond



(Fig. 1.)



(Fig. 2.)

the effect of frost). The ordinary "Merry Sink," 21½ inches long, 17 inches wide and 9 inches deep, to be had from all dealers in sanitary fixtures and illustrated in Fig. 1, answers admirably as it has no corners within that can retain dirt or filth, and the

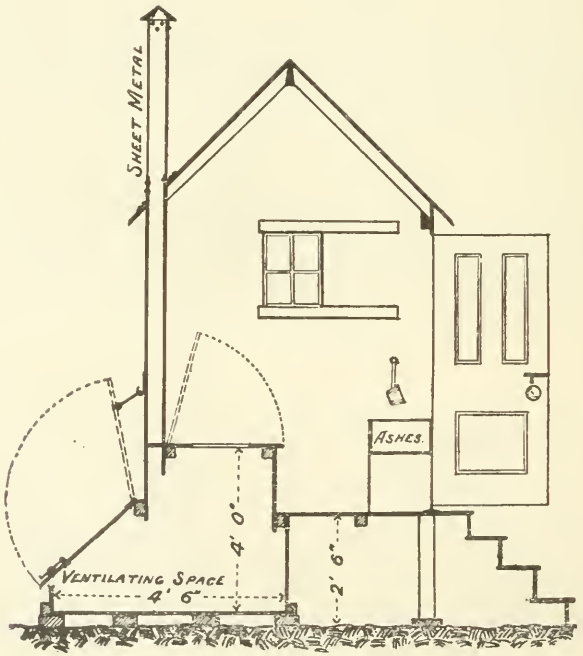
screen over outlet is large and exactly suited for use required. This sink should be covered with a strong box of wood with hinged cover to protect the sink from injury. This box and enclosed sink should be ventilated by boring several holes through the box near the surface of the ground and by carrying a ventilating shaft of wood or sheet metal from the top of the box to some convenient height above the ground away from windows. This sink should be thoroughly and frequently scrubbed, and to prevent improper use of sink the screen or strainer placed over the outlet must be permanently fixed.

Unless kept scrupulously clean this outside slop sink should not be placed in any building or shed, but it may be placed at one side of an outside building; the ventilating shaft being carried up the side of the building. A roof may be built over the fixture if desired.

If roof water is permitted to enter the sewer system it would be advisable to allow one rain water leader at least to discharge into this sink.

The yard hydrant for water supply should be located so that drip and waste water can be readily conveyed to this slop hopper.

The Dry Earth or Ash Closet.—"The dry earth or ash closet used for the 'treatment' of night soil should be built according to the 'Brantford' plan. Fig. 3 shows the style of closet generally used in Brantford, where there are now about 1,300 in use. Movable drawers, boxes or pails are not used, because in this climate a little moisture freezing in winter makes their removal or emptying difficult. The box is therefore fixed and can generally be arranged so as to be emptied with a shovel by a door or lid in the rear, as shewn in the figure.




(Fig. 3.)

The boxes are made of lumber. A moderately tight box, not sunk in the ground, where no slops are thrown in, good ventilation provided, and a little dry earth or coal ashes thrown in at each use, or even once daily, will not become offensive and will last for half a lifetime. This closet is very cheap. Old privies can easily be changed into ash closets by emptying and cleaning the pits and filling them with clean earth, then raising the structure about two feet, placing the box under and providing a couple of steps. In many places in Brantford they are built under back sheds, etc., with access from the house.

An ample box should be provided within the closet for the coal ashes or dry earth, also a convenient scoop or dish for their application. Dry earth (top soil, never sand) is assumed to be the proper applica tion, but in practice it is little used, being not ready to hand as the coal ashes usually are, and being often not dry. The coal ashes should be kept under cover, they need not be sifted. Wood ashes in practice are

found to be offensive. In the public schools in Brantford a shovelful of coal ashes is thrown down each opening once a day by the janitor after the school is closed, and after six years' experience these school closets are proved to be as inoffensive as the best arranged water closets.

These ash closets make no provision for liquid refuse, and it is imperative that no chamber slops or kitchen refuse should be thrown into them. The disposal of such liquid refuse should be by the outside slop sinks connected with drains or sewers. Where there are no such drains or sewers the disposal of such liquid refuse is, in crowded neighborhoods, a difficult problem, and it is not the purpose of this paper to speak of the many expedients resorted to for solving it.

The dry ash closets should be emptied once a month for an ordinary family service or for schools. In other cases a more frequent service may be necessary.

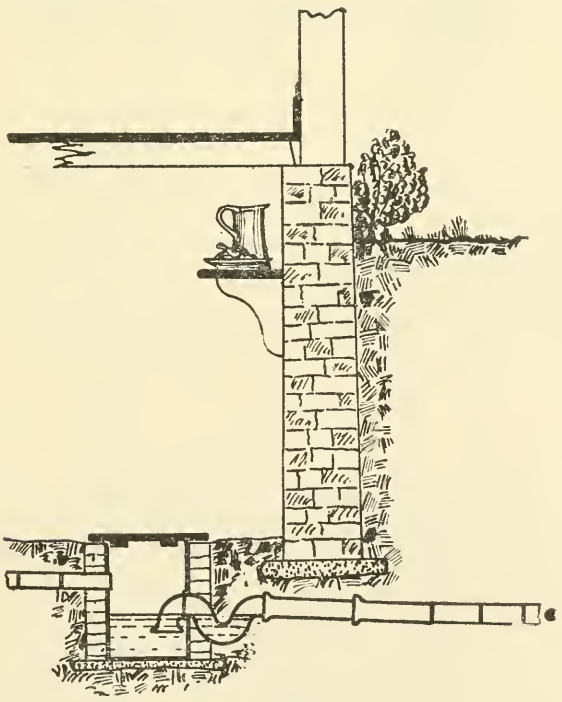
The cost of a monthly service is in Brantford $1.80 per annum. The average distance to the dumping ground being about 1½ miles. One man with a one-horse cart easily attends to 600 closets. It is absolutely necessary that a systematic and efficient contract service be provided.

It may be added that while serious difficulties exist in providing dumping grounds for the contents of privy pits and cesspools, no difficulty whatever has arisen as to the dumping of contents of dry ash closets, such being readily disposed of upon market gardens.

In those of our cities already well provided with sewers, thousands of noisome privy pits still exist. (There are over 12,000 in the City of Toronto). The expense of introducing water closets in the cheaper tenements, the want of a suitable place to locate them where they would not be affected by frost, and the additional water rates required for flushing them, prevent their erection in such tenements. The systematic introduction of dry ash closets in these cases in conjunction with the outside slop sinks offers an effectual means of abating this widespread and dangerous nuisance."

Garbage.—Combustible garbage can be burned in the kitchen stove, and the ashes not needed for the closet, together with the incombustible garbage and refuse, should be removed periodically by carts.

Cellar Drainage.—Cellar drainage can be best secured by keeping out surface waters by proper ditches and channels, and by lowering the subsoil water by the use of porous agricultural drain tile as shewn.



(Fig. 4.)

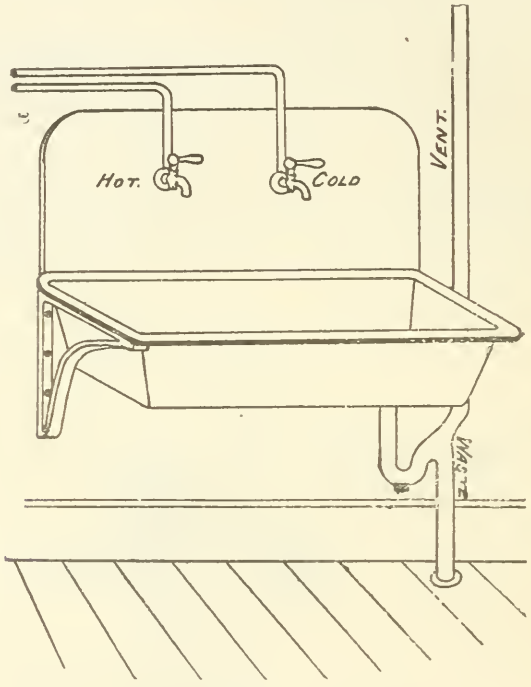
A small well or pit about 2 feet square and 2 feet deep should be built of brickwork about 2 feet from the cellar wall at the point of exit of the drain, this pit to serve as a small catch-basin, preventing entrance into the street tile or house tile of dirt, sand, or other foreign bodies. Into this pit the drain tiles (laid outside the foundation walls, and in wet springy ground, under the cellar floor) should empty.

The exit should not be less than 18 inches deeper than the floor of the cellar.

In most cases it is desirable to place a trap on this drain as near the inlet as possible and a fine wire netting should be placed over the inlet.

The cheap cottage, renting at $5 per month or less, has now been provided for.

The Kitchen Sink.—In houses renting from $5 to $12 per month a kitchen sink is the only inside fixture required, the outside slop hopper being still retained for chamber slops, as well as the dry ash closet for night soil.



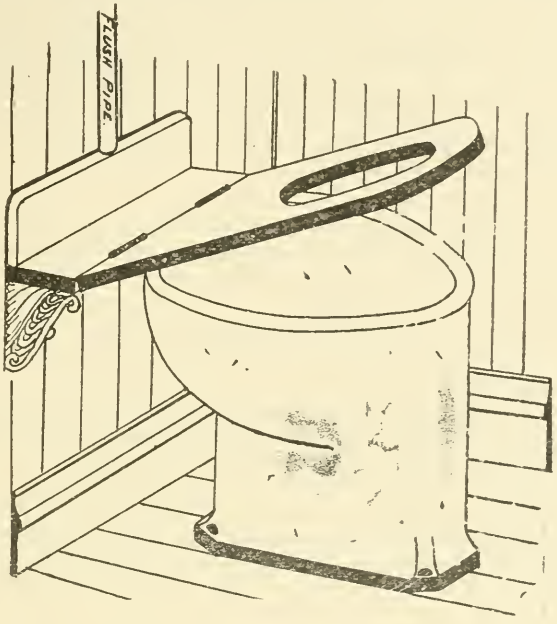

(Fig. 5.)

This sink should be of iron, preferably porcelain lined, properly trapped and the trap ventilated by a pipe not less than 2 inches in diameter, carried through the roof. The waste pipe should be of iron, well coated with asphaltum varnish, with screwed joints or run with lead and caulked. The house sewer should be 4 inches in diameter, of vitrified salt glazed sewer pipe, except for 5 feet entering the wall of the house which should be of cast iron "extra heavy" soil pipe 4 inches in diameter.

The ordinary cast iron sink of the hardware shop, if it has a proper fixed strainer, and if properly supported, and if kept well painted, is perfectly safe and is cheap. Galvanized iron or pressed steel sinks and porcelain lined sinks are better but more expensive.

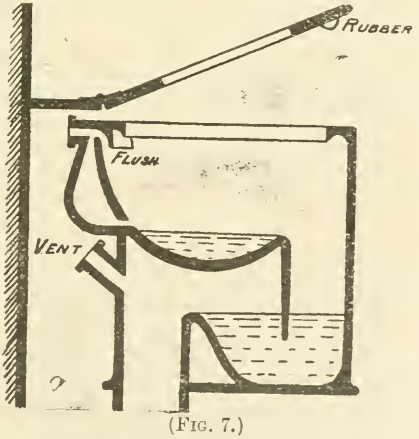
Water Closet.—In houses renting for more than $12 per month a water closet should be substituted for the outside slop sink and the dry-ash closet, this one fixture combining in itself water closet, urinal and slop hopper.

This fixture should be of strong earthenware with all parts easy of access, so that need of cleansing may be apparent to the eye before any other sense is cognizant of the fact.




(Fig. 6.)

The closet above shewn is one of the best of the cheaper closets in the market. It has a broad base, thus being not easily loosened by rough usage. The "horns" for connections are very strong and well proportioned, thus not easily broken off by carelessness or by accident. The outlet is at the front—not obstructed in any way by bends—thus allowing of instant inspection and easy cleansing. The flush is thoroughly effectual and not spattering, as many otherwise good closets unfortunately do. This closet is of so heavy and strong a design that no supports are necessary for the seat, which rests directly on bowl, but rubber cushions should be placed on lower side of the seat. The hinged seat should be counter-balanced to prevent danger from rough usage.




(Fig. 7.)

No part of closet pipes or connections should be encased with any woodwork whatever. The wooden seat as shown is all the woodwork that is required.

The water closet compartment should be well lighted and ventilated by a shaft extending from the ceiling over the fixture to the outer air, to the "cock loft" of the building, or to a flue or chimney; this shaft to be not less than 40 inches in area.

In any building or house only two fixtures are absolutely necessary for the removal of liquid household wastes and the excreta, viz.: the water closet, and the kitchen sink; and except for the great inconvenience the water closet could be made do for both.

In choosing a water closet avoid "pan closets," "plunger closets," "valve closets," and "hopper closets." A simple washout closet in one piece, with front outlet, is the best closet of moderate cost now made."

It is apparent, therefore, that methods of public sewerage have reached that stage which makes their adoption practicable in every growing village and town. The one difficulty remaining is that of how to deal with the sewage at its exit from the main sewers.

This problem is beset with difficulties incident, not so much to the crudity of methods which are already in successful operation, as to the lack of knowledge regarding them which exisst in Ontario.

This is not to be wondered at when it is remembered that it is only within the last ten years that sewerage systems have been to any extent developed even in our largest cities. In spite, however, of these difficulties, manifest progress in the solution of the difficulties of sewage disposal is being made.

Reference was made at length in the report for 1888 to the Sewage Farm at London Asylum. From the reports of Mr. Horetsky, engineer of the Public Works Department, in August, 1890, as also in February, 1891, it will be seen that the farm is doing most satisfactory work.

From a report made by this gentleman in July, 1890, I abstract the following:

"Thence the sewage is pumped through an 8-inch main to the disposal field, 1500 feet distant, where, upon the highest part of a 20 acre field a tract of 4½ acres were levelled and divided up in to arrangement of beds and ditches shown on the diagram.

The mode of working the irrigation tract is as follows:—

At 2 p.m., each day, the centrifugal pump is set in motion, and the daily average, say from 55,000 to 60,000 gallons of sewage is pumped on to the level tract in the space of 1½ to 2 hours.

By the system of dams already described, any portion of the tract can be flooded. In general six of the ditches are sufficient for one day's pumping, and the whole dose when spread over the six ditches covers the latter to the depth of 4 inches in the centre. From 10 to 11 hours later the whole has disappeared, the entire tract being again dry, with the exception of the easterly portion of the northerly ditches where the soil is rather heavy and underneath which there lies a rather impervious stratum of clay.

The area of the level tract is however so large that the refractory ditches in question are generally given more time than the others to dispose of their contents.

In general each set of ditches obtain 48 hours rest after flooding.

But in addition, the large irrigating field south of the level tract can be utilized at any time if necessary.

Here I may call your attention to a fact of importance. Many of you doubtless in picturing to yourselves the appearance of the flooded ditches, see a series of fetid canals bearing on their surface floating and putrescent abominations which, after absorption of the liquid portion, cling to the sides of the ditches and foul the vegetation. There is nothing of the kind visible, the thorough pounding given to the sewage by the pump completely reducing all solids to pulp and the consequence is that nothing solid larger than a pin's head can be seen in the dirty water upon its arrival at the distributing well. This alone repays amply for the cost of pumping, since, after absorption has taken place, all that remains in the bottom of the ditches is a very thin film of organic paste nearly inodorous, and in fact quite so, if there has been strong sunlight. This paste breaks up

by the action of the sun and air, and is raked to the beds between which and the ditches a continual interchange of soil is taking place, the patients detailed for this work being constantly enployed in raking and keeping clean the ditches.

So light and porous is the soil of this level tract that neither rain nor sewage leave any traces of moisture after a short time, indeed after a rest of 12 hours duration, the beds and even the ditches (with exception of the clayey portion) assumed a parched look.

Hitherto, from what cause I am not able to say, very few attempts have been made at systematic cultivation of the beds upon this level tract. At present, some desultory trials are in progress, and when last in London, I saw very excellent samples of squash, vegetable marrow, pumpkins, citrons, melons, tomatoes, turnips and carrots upon these beds, and their advanced and healthy appearance was decidedly apparent. It appears to me that these beds should be cultivated to their full extent; vegetation to absorb the putrescible matter of the sewage being a *sine qua non*, in fact playing the most important part in the system. And if we desire to get rid of the filtrate daily deposited upon theses ditches, the more quickly vegetation is fostered the better.

Now it will not be out of place to say a few words upon the subject of smells, flies and other objectionable matters commonly laid to the charge of sewage irrigation farms.

With the thermometer at 85° in the shade and a strong wind blowing, also under the conditions of a close and muggy atmosphere, smells were not perceptible, excepting during pumping time or when the ditches were wet. It is undeniable that when the ditches are empty and dry there is no smell.

As for flies I have never seen any, nor has the attendant in charge.

The population of the asylum is about 1,100. Deducting the few who use earth closets, it will probably be near the mark to estimate the sewage contributors at 1,000 persons. The daily output being assumed at 60,000 gallons, we get 60 gallons per day per capita."

Again he reports to Mr. Tully, the chief of the Department on the 10th of January. "I have to report that the irrigation tract is in excellent order and well attended to by R. Flynn and his four men."

That such a method of disposing of sewage is successful under favorable circumstances has been established beyond a doubt for Ontario; and it is encouraging to see evidence of the principle being more widely adopted. The City of Brantford has selected a good site for its sewage farm; Berlin, in case the proposed by-law carries, will similarly provide for this method of disposal, while other places are watching with much interest the progress of sewage farming.

Methods for precipitating sewage have not been introduced anywhere in Canada on a scale sufficient to enable us to decide on their merits. Doubtless they will succeed under proper conditions, at a cost, however, somewhat greater probably than sewage farming.

In most instances where sewage disposal is attempted on a large scale, a combination of precipitation with irrigation may be expected to produce most satisfactory results.

---

## V. NUISANCES ARISING FROM SLAUGHTER-HOUSES AND OTHER OFFENSIVE TRADES.

This subject has in past reports been referred to and is one which perhaps more than any other is the subject of correspondence with Local Boards of Health. The difficulties in dealing with such arise from two causes; the first being the establishment in the past of various industries, notably those of slaughter-houses and cheese factories, and the second being the progress of manufacturing whereby new industries are yearly being introduced; and as many towns are very anxious to have such manufactures amongst them,

very often crude contrivances are at first constructed for dealing with the refuse products through ignorance of the nature of such, or because at first the nuisance created is not of a serious nature.

Referring to slaughter-houses, the following extracts from the local board reports for 1390, exactly state the situation.

*Re* Slaughter-Houses.

*Chatham.*—Two slaughter-houses closed during the year, one for being within town limits. and the other for being too near the highway.

*Cornwall.*—No slaughter-houses permitted within the corporation between May and November.

*Kincardine.*—There has been a great deal of trouble with slaughter-houses, hog nuisances, etc.

*Peterborough.*—Slaughter-houses forced outside the corporation.

*Paris.*—Successful removal of all slaughter-houses from the town, though not without strong opposition on the part of the owners.

*Windsor.*—The removal of a slaughter-house from the town, but not at a distance sufficient to banish the disagreeable emanations arising from it.

*Alliston.*—Frequent inspection of the slaughter-houses made.

*Ashburnham.*—Some owners of slaughter-houses keep pigs in connection with their slaughter-houses, inside the corporation, even in the most thickly populated places. It is recommended that all slaughter-houses be removed outside of the village.

*Bolton.*—The slaughter-houses were visited several times during the warm weather.

*Creemore.*—Had great difficulty with a slaughter-house nuisance, but it is satisfactory at present.

*Embro.*—No slaughter-houses exist within the corporation.

*Exeter.*—The butchers are reported as having been very careful about their slaughter-houses, therefore no nuisances have arisen.

*Milton.*—Have been successful in having all slaughter-houses removed from within the corporation.

*Norwich.*—One slaughter-house still remains in the town and complaint has been made, but the board has not succeeded in removing same.

*Ottawa.*—Five slaughter-houses within the municipality, only one of which was found in good sanitary condition. Permits were granted the others on putting their premises in a sanitary condition. One man disregarding the notice to discontinue slaughtering, was brought before a migistrate and fined.

*Streetsville.*—Notwithstanding the steps taken to do away with the slaughter-house nuisance, the slaughtering is still continued in the centre of the village in contravention of the Public Health Act.

*Wallace.*—The slaughter-houses are reported in good sanitary condition.

*Weston.*—Sanitary inspector reports the slaughter-houses in a fairly satisfactory condition.

Townships.

*Burton.*—The butchers readily comply with all notices *re* the cleanliness of their slaughter-houses.

*Blenheim.*—Slaughter-houses, formerly great nuisances, have all been moved outside the villages, and all nuisances abated.

*Blanshard.*—Slaughter-houses have been thoroughly inspected.

*Bosanquet.*—Slaughter-houses inspected and found in a good sanitary condition. No complaints have been made.

*Dumfries, North.*—Slaughter-houses found in a very satisfactory condition.

*Esquesing.*—Removal of all slaughter-houses from the municipality.

*Flamborough, West.*—Slaughter-houses examined and found in a very satisfactory condition. Twelve permits granted.

*Georgina.*—The slaughtering of animals in the village of Sutton during the summer months has been discontinued.

*Hope.*—Slaughter-houses were visited, and if found in an unsatisfactory condition were ordered to be cleaned.

*Humberstone.*—Slaughter-houses have been kept out of town at a proper distance.

*Harwich.*—Slaughter-houses were examined and found very carelessly managed.

*London.*—Complaint received *re* a slaughter house. On inspection it was found as clean as possible, but owing to its situation affecting others in the neighborhood, the license was revoked.

*Minto.*—Slaughter-houses kept in a manner creditable to the owners.

*North Crosby.*—Slaughter-houses inspected and found in a sanitary condition.

*Nissouri, West.*—Slaughter-houses inspected and ordered to be put in a sanitary condition.

*Normanby.*—Slaughter-houses examined and found in a fair state of cleanliness.

*Pilkington.*—One slaughter-house exists as a nuisance. Efforts are being made to remove same.

*Sundridge.*—Slaughter-houses removed about half a mile from town.

*Stamford.*—Slaughter-houses examined and generally reported as favorable.

*South Easthope.*—Slaughter-houses complained of, and owners notified to put them in sanitary condition. Complied with.

*Southwold.*—Slaughter houses were inspected and generally found satisfactory.

*Wellesley.*—Owners of slaughter-houses adhere closely to the law.

Everyone who knows how frequently farmers do a limited amount of butchering, and how in rural municipalities *the corners* and then the village springs up, can follow exactly the history of most of the slaughter-houses referred to in these reports. A rough shed serves for years; and by degrees has additions made. All the old boards, uneven floors and saturated soil beneath are retained; while no provision for an abundant water supply, or for drains to remove the floor washings exists. Houses have been built on neighboring lots, and when summer comes the stench from decaying blood and other animal refuse becomes sickening, and very frequently has added to the above the emanations from hog-pens where the blood and entrails of the slaughtered animals are fed. With such a state of affairs it becomes manifest that the question which arises is not whether a nuisance is created, but whether there are persons living so near the slaughter-house that it renders the enjoyment of life and property uncomfortable. That there is a limit at which this is true is recognized by schedule A of the Public Health Act, which says :—

Section 8. No proprietor or tenant of any shop, house or outhouse, shall, nor shall any butcher or other person, use any such house, shop or outhouse at any time as a slaughter-house or for the purpose of slaughtering any animals therein, unless such shop, house or outhouse be distant not less than two hundred yards from any dwelling-house, and distant not less than seventy yards from any public street.

But the protection given to the public is further provided for under the succeeding section :—

Section 9. All slaughter-houses within this municipality shall be subject to regular inspection under the direction of the Board of Health; and no person shall keep any slaughter-house unless permission in writing of the board for the keeping of such slaughter-house has first been obtained, and remains unrevoked.

Such permission shall be granted, after approval of such premises upon inspection, subject to the condition that the said houses shall be so kept as not to impair the health of persons residing in their vicinity, and upon such condition being broken the said permission may be revoked by the board; and all animals to be slaughtered, and all fresh meat exposed for sale in this municipality shall be subject to like inspection.

Though the law is explicit enough yet it has often proved a difficult matter for local boards, or their officers not accustomed to the work, to determine what recommendations and methods will best serve to permanently abate the nuisances from such sources.

To this end the regulations for the County of London, Eng., are here given, which during many years have been found to be very satisfactory. The by-laws deal with the sources of nuisance in blood-drying, slaughtering, etc., such as :—

1. Effluvia from putrid blood arising from the exhausted blood clots prior to removal.

2. The disagreeable smell proceeding from the yard and premises, especially when the most scrupulous cleanliness has not been observed.

3. Effluvia from other processes, such as fat rendering, manufacture of manure, etc.

## London County Council.

*(37 and 38 Vic., c. 67.)*

By-laws for slaughter-houses in the County of London.

In pursuance of the slaughter-houses, etc., (Metropolis) Act, 1874, and of the Local Government Act, 1888, the London County Council hereby make the following by-laws for regulating—

(*a*) The conduct of the business of the slaughterer of cattle ;

(*b*) The structure of the premises in which such business is being carried on ; and

(*c*) The mode in which application is to be made for sanction to establish such business anew within the county of London (except the city of London and the liberties thereof), that is to say :—

By-laws for regulating the conduct of the business of a slaughterer of cattle in the county of London.

1. Every occupier of a slaughter-house—

(*a*) Shall cause all animals intended for slaughter to be kept upon the premises only in pounds, pens and lairs.

(*b*) He shall not keep in a slaughter-house, or in such pounds, pens or lairs any animals not intended for slaughter, or any animals the flesh of which would be unfit for use as human food.

(*c*) He shall not keep in such pounds, pens or lairs a greater number of animals than is herein provided, that is to say :—

1. In the case of cattle, one animal to every twenty-four square feet of floor space therein.

2. In the case of calves, one animal to every eight square feet of floor space therein.

3. In the case of calves, lambs and pigs, one animal to every six square feet of floor space therein.

(*d*) He shall not keep therein any animals for a longer period than may be necessary for the purposes of preparing such animals for slaughter.

(*e*) He shall provide such animals with a sufficient quantity of wholesome water and food.

2. Every occupier of a slaughter-house—

(*a*) Shall slaughter all animals in the slaughter-house, and shall not slaughter or permit to be slaughtered any animal in any pound, pen, or lair, or in any part of the premises other than the slaughter-house.

(*b*) He shall, in slaughtering animals, use such instruments and appliances, and adopt such method of slaughtering, and otherwise take such precautions, as may be requisite to prevent unnecessary suffering to any animal.

(*c*) He shall not slaughter or permit to be slaughtered any animal within public view, or within sight of other animals.

(*d*) He shall provide sufficient vessels or receptacles, properly constructed of galvanized iron or other non-absorbent material, and furnished with close-fitting covers; and shall cause all blood from any animal slaughtered to be caught and placed in such vessels or receptacles.

(*e*) He shall, upon the completion of any slaughtering, cause all manure, garbage, filth, or any refuse residues from the animals slaughtered, to be forthwith placed in such vessels or receptacles.

(*f*) He shall cause such vessels or receptacles to be kept closed while containing any of the aforesaid substances.

(*g*) He shall cause all such substances to be removed and conveyed from the premises in such closed receptacles.

(*h*) He shall cause the fat of any animal slaughtered to be kept freely exposed to the air while upon the premises.

(*i*) He shall cause all blood, manure, garbage, filth, or any refuse residues from the animals slaughtered, and all hides, skin, fat and offal therefrom, to be removed from the premises within twenty-four hours of the completion of slaughtering, in such manner and by such means as will not cause nuisance either at the premises or in the public streets.

(*k*) He shall, so far as it is reasonably practicable, prevent any blood, manure, garbage, filth, or any refuse residues from animals slaughtered entering any drain or sewer, or any inlet to any drain or sewer.

3. Every occupier of a slaughter-house—

(*a*) Shall cause every part of the floor of such slaughter-house, and every other internal part of such slaughter-house, and also the fittings thereof, upon which any blood, or refuse, or filth may have been spilled, splashed or deposited, to be thoroughly washed and cleansed within three hours after the completion of any slaughtering.

(*b*) He shall cause every part of such floor and all internal walls and fittings within six feet of such floor to be at all times kept in good order and repair, so as to prevent the absorption therein of any blood, or liquid refuse, or filth.

(*c*) He shall not permit the surface of the walls and the fittings within six feet of the floor to be covered with cement-wash, lime-wash or other like substance.

(*d*) He shall cause all utensils, receptacles, and appliances used in such business to be kept, when not in actual use, in a thoroughly clean condition.

(*e*) He shall cause all internal walls and fittings of such slaughter-house not within six feet of the ground, and the internal walls and fittings of any pound, pen, or lair, to be thoroughly lime-washed with hot lime at least four times in every year, that is to say: between the 1st and the 10th days of the months of March, June, September and December, respectively.

(*f*) He shall cause all dung and offensive litter to be swept up and removed from every pound, pen or lair at least once a day, and such place to be thoroughly cleansed as often as may be necessary to keep the same in a clean condition.

4. Every occupier of a slaughter-house—

(*a*) Shall cause the means of ventilation provided thereto, and to any pound, pen or lair to be kept in proper order and efficient action, so that at all times such slaughter-house, pound, pen or lair shall be effectually ventilated by direct communication with the external air.

(*b*) He shall cause the means of drainage provided on his premises to be kept at all times in proper order.

(*c*) He shall cause the means of water supply provided upon his premises to be kept in good order, and shall at all times provide a sufficient supply of water for the proper cleansing of his slaughter-house, pounds, pens or lairs, and of the vessels and receptacles therein.

5. Every occupier of a slaughter-house—

(*a*) Shall allow the slaughter-house to be used for no other purpose than the slaughtering and dressing of animals the flesh of which is fit for, and is intended to be sold as, human food.

(*b*) He shall allow no person other than himself and his servants to slaughter animals or dress the carcases thereof upon his premises, unless he is authorised to do so by the council in writing.

6. Every occupier of a slaughter-house shall at all times employ such means and adopt such precautions as may be necessary for preventing nuisance arising upon his premises.

7. Every occupier of a slaughter-house shall at all reasonable times afford free access to every part of his premises to the inspectors and other persons authorised by the council in writing to inspect slaughter-houses, and he shall enable such inspectors or other persons to examine the premises without obstruction or unnecessary delay.

8. Every person breaking any of the foregoing by-laws shall be liable for every offence to a penalty of not exceeding five pounds; and in the case of a continuing offence to a penalty of one pound for every day during which the offence may be continued after conviction for the offence.

9. In pursuance of the provision in the behalf contained in section 4 of the slaughter-houses, etc., Metropolis Act, 1874, power is hereby given to every court of summary jurisdiction, by summary order, to suspend or deprive any person altogether of the right of carrying on the business of a slaughterer of cattle, as a penalty for breaking any of the foregoing by-laws.

By-laws for Regulating the Structure of the Premises upon which the Business of a Slaughterer of Cattle is being carried on in the County of London.

10. Every such premises shall include a slaughter-house and one or more pounds, pens or lairs, and—

(*a*) Such slaughter-house shall have a floor space of at least one hundred square feet, and the walls thereof to a height of six feet from the ground shall be substantially constructed of brick, stone, iron or concrete; and such slaughter-house shall be covered with a properly constructed roof.

(*b*) Such pounds, pens or lairs shall be separated from such slaughter-house by means of close partitions to a height of at least five feet in the case of cattle, and at least three feet in the case of sheep, lambs and pigs, and all doors in such partitions shall be closely boarded.

(*c*) Such premises shall have an approach to the slaughter-house which shall be throughout of a width of at least three feet six inches, and such approach shall not be up or down steps, or over slopes having a steeper gradient than one foot in four feet; provided that where sheep, lambs and pigs only are killed, the width of the approach shall be at least two feet nine inches throughout.

11. Every slaughter-house and pound, pen or lair upon such premises—

(*a*) Shall be well and sufficiently lighted and ventilated by louvred openings in the walls and roofs, or by other approved openings, windows or lights.

(*b*) Shall be well paved with granite, cement, concrete, or with other approved hard and impervious material set with cement properly bedded on concrete; and such paving shall have a proper slope towards a gully-hole; and such gully-hole shall communicate by an adequate drain of glazed stoneware pipes with the public sewer, and be trapped by an appropriate fixed trap, and be covered with a fixed grating, the bars of which shall be not more than three-eighths of an inch apart.

(*c*) Shall be provided with means for an adequate supply of water, and where there is not a constant water supply, with a slate, metal, or metallic-lined tank, the bottom of which shall be not less than six feet from the floor; and such tank shall be properly covered, and an adequate water trough shall be in every pound, pen or lair.

12. Every slaughter-house shall have inner walls, doors and woodwork covered with hard, smooth and impervious material to a height of at least six feet from the floor.

13. A slaughter-house shall not have any rooms or lofts thereover, and a slaughter-house, pound, pen or lair—

(*a*) Shall not have any openings therefrom directly into any building used as a dwelling.

(*b*) Shall not contain any water-closet, privy, urinal or stable, and a water-closet, privy, urinal or stable shall not be in direct communication with, or ventilate into, any slaughter-house.

14. Every person who shall not comply with any of the foregoing by-laws relating to the structure of the premises shall be guilty of an offence, and shall be liable, for every such offence, to a penalty of one pound for every day during which the offence may be continued after the conviction for the first offence; provided, always, that the foregoing by-laws for regulating the structure of the premises shall not, until after the expiration of six months from the date of the confirmation of the by-laws, be deemed to apply to any premises where at such date the business of a slaughterer of cattle may be carried on; and further provided, that a requirement of such by-laws for regulating the structure of the premises shall not be deemed to apply to any premises in respect of which the London county council shall have, by endorsement in writing on the back of any current license to use such premises as a slaughter-house, exempt such premises from such requirement.

A matter of equally great importance, however, is the conduct of the slaughter-house, apart altogether from the question of nuisance. From correspondence which has been from time to time brought to the attention of the Board, it appears that medical health officers, veterinary surgeons, and even the general public are becoming cognizant of the fact that animals suffering from various diseases are sold, often cheaply, and are slaughtered and knowingly placed on the market for human food. We are not yet aware to what extent this practice is carried on, but the following letters indicate the views of officers of health regarding it :—

From Dr. Morton, Wellesley Tp. :—

"Our chief concern during the past few months has been fighting actinomycosis, and several animals have been condemned and destroyed. The Board of Health has just now an action pending in court against a man who slaughtered and sold the meat of one animal so affected. On investigation I find that the disease is much more common than is generally supposed; and it is feared that many of the animals are surreptitiously sold as meat, for dealers in beef cattle invariably reject them."

From Dr. Harbottle, of Burford Tp. :—

"On January 23rd, 1891, concerning the case of tuberculosis in a cow slaughtered for food in Brantford township, just across the town line dividing Burford and Brantford townships, you wrote me, 'you will notice it limits the actions of the health officer to his own township, but if as I suppose is the case, the owner of this animal lives in Bur-

ford, I think it would be a very proper case for the Local Board of Health to deal with under the powers given it under section 99 of the Public Health Act, and in the amendment thereto.' I also had thought it a very proper case for Burford local board of health to deal with, especially when the animal was owned and fatted in Burford township, and the butcher who killed it lived in Burford township, and the carcase being brought to Burford township was seized there, withheld from sale and most of it ordered to be buried deeply. I took the opinion of the Burford Township Council thereon, and the clerk thereof, Mr. Albert Foster, told me that they held that they had 'no jurisdiction,' and consequently refused to pay anything in the case, either to the veterinary surgeon who examined and gave a certificate of tuberculosis, etc., or the party who buried the animal, or the magistrate who gave an order of seizure under the Dominion law, or to the medical health officer. I write you this as I understand the Health Act is to be amended. I know it is a debatable question of expediency, but I judge the municipality owning an animal having an infectious disease, fed and seized there, even if killed elsewhere, should pay. Most do not want to pay. Perhaps they meant the bills should first pass the Burford local board of health."

From A. R. Pyne, M.D., Toronto.

The following is an extract from last month's report of the city's general license and meat inspector:—"I have found eleven cases of osteosarcoma or lump-jaw in cattle. I wish you would confer with the Provincial Board and ascertain their views in relation thereto." I think there is no doubt but the disease here termed osteosarcoma is really actinomycosis. I intend having a portion of the diseased part in the next case occurring kept for the purpose of making a thorough investigation. Would be pleased to hear from you in reference to the matter.

The fact is, however, recognized in foreign countries, and notably in Germany, where the work of inspection is systematically carried out.

The following is an abstract from the *Œffenteiche Gesundheits und Krankenpflege der Stadt*, Berlin, 1890, of precautions, taken from the *Fest-schrift* published there last year for the meeting of the International Medical Congress:

*Berlin system in use for Abattoirs.*—Cattle and sheep can be killed only in the public abattoirs The inspection of animals there killed, also of all meat submitted for consumption, is confided to municipal direction dependent on the inspection committee of the abattoirs in chief.

The inspection of meat is made under the direction of a veterinary surgeon of the first rank in the macroscopic and microscopic section. In the first section a certain number of assistant veterinary surgeons are employed. In the second a large number of inspectors (men and women) of meat, which has to undergo special examination in the following particulars, viz: Pieces taken from the head, abdomen, throat and intercostal muscles, various organs, etc., are subjected to careful examination and direction. After completion of this the veterinarian in charge notes the name of the butcher, the number of the abattoir and the kind and number of the animals examined, the condition of diseased animals and the parts diseased, with the nature of the disease. Healthy animals are immediately stamped with a colored stamp, those which are not healthy are labelled "temporarily referred back." A special journal is kept at the bureau for the ruminants in which all the above facts are entered.

Another journal at the bureau contains all the facts with regard to animals rejected, to be used eventually in case of litigation.

*Precautions with regard to Pork.*—The facts with regard to pigs are filled in at the Trichina inspection office. The microscopic department (trichina inspection) is under a special head with numerous assistants. The greatest care is taken in appointing trichinal inspectors that they shall be perfectly qualified to carry on their work. They must be able within a certain time (18 minutes) to prepare 24 specimens of a pig (6 specimens for each of 4 samples), and be able to demonstrate and count the trichinæ therein contained. The process of microscopic examination is as follows:—

As soon as the animal is killed the head of the office is notified who sends an officer

to take samples. The samples are taken from the diaphragm, muscles of the larynx, abdominal and intercostal muscles. These are enclosed in tin boxes provided with numbers. The pig is then labelled with the same number as that on the box which contains the samples taken from it, and the lungs and liver of the same animal are similarly numbered. Sample takers are required to note whether the flesh is measly (tape-worm cysts). If so notice is at once given at the office. At the office the samples are turned over to the inspectors, and of each sample six preparations are made, each a square centimetre in size. Special slides and cover-glasses are used to facilitate this examination, and the preparations are so arranged that 1-6 are from the diaphragm, 7-12 from the larynx, 13-18 from the abdominal muscles, 19-24 from the intercostals. If one animal is found to be trichinosed, immediately all the other animals of that lot are separated and subjected to a specially searching examination. Trichinosed animals are marked with a conspicuous stamp, "Trichinous," whilst healthy animals are stamped with a blue stamp as passed. After this examination the results are entered in the books, and the animals receive the stamp of the inspection and of the veterinarian, who has also made a macroscopic examination of the organs. Only when this is done is the flesh exposed for sale.

Meat infected with cysticerci or with actinomycosis, as well as the fat of tuberculous pigs, are placed in a special oven under official control, and after heating to a very high temperature the fat is extracted and sold.

*Prohibited Meat.* — Meat is prohibited which shows any of the following conditions :—

1. Meat of such diseased animals about which there is still doubt as to the character of the disease.

2. Tuberculous animals.

3. Animals showing caseous pneumonia.

4. Animals that have died, or were killed while dying.

5. Animals suffering from severe infectious diseases, blood poisoning, local diseases combined with high fever, animals suffering from poisons or from too great doses of medicines. Also under this head come pyæmia, septicæmia, typhoid and all diseases of a typhoid character, severe inflammation, either internal or external, extensive suppuration, etc.

6. Dropsical animals, if the disease is extensive or combined with great wasting.

7. Animals which have suffered from "erysipelas" (schweine rothlauf) or lupinosis.

8. Meat which shows more or less extensive tissue changes, such as ulcers, ecchymoses, abscesses, inflammatory products or calcareous deposits.

9. Flesh that is infected with animal or vegetable parasites which are dangerous to man.

10. Meat of unborn calves.

11. Œdematous meat.

12. Meat that has become putrid.

In cases of cysticerci in pigs, if only one is found and careful investigation does not reveal the presence of any more, the meat is exposed for sale.

Of 1,570 pigs referred back on account of cysticerci, 317 were afterwards allowed to be sold on account of the inspectors not being able to find more than one.

The number of animals slaughtered in the official year 1889-90 was as follows :— Cattle, 154,218 ; calves, 125,338 ; sheep, 430,362 ; swine, 442,121. Total, 1,152,039. Of this number 6,891 were found unfit for human food (say 1 in 1,678).

(Here are inserted a number of tables of statistics of diseases and slaughtered animals.)

All the foregoing pertain to slaughtering in the great central abattoir, but a considerable supply of flesh meat is brought into the city by country butchers. In year 1889-90

there were thus brought under inspection 137,047 quarters of beef, 141,884 calves, 68,044 sheep, 104,664 swine. Of these there were rejected because of tuberculosis 179 quarters of beef, 1 sheep and 15 swine.

That so elaborate work is required in Ontario it might perhaps be too much to say; but that in large centres like Toronto, systematic supervision of meat supplies is urgently demanded, I have very good reasons for knowing. Manifestly the first step in this direction would be the construction of an abattoir and the prohibition of the sale of all meat within the city limits which had not undergone proper inspection.

*Knackeries.*—There are other kinds of nuisances coming under this head which have been referred to; and amongst these that of knackeries has always been a source of trouble. It will be remembered that in the suburbs of Toronto the Hallett manufactory caused much trouble some years ago. A nuisance of the same character existed near Ottawa, and another near Hamilton. Here again the essential cause of trouble lay in the crude methods adopted; and it is with pleasure that I can refer to the recent establishment near Hamilton of a fertilizer works, in which animal refuse is largely used, with facilities for economically dealing with these products, and so conducted as to reduce very greatly the nuisance with has so commonly been associated with such works. The following report of an inspection made at the request of the proprietor of the premises of the Dominion Fertilizer and Casing Company situated in Barton township, a suburb of Hamilton, will be of much interest to local boards who have to deal with factories of this kind.

W. A. Freeman, Esq.,
169 St. James Street North,
Hamilton.

Dear Sir,—It gives me pleasure to report as follows on the inspection made by me on February 8th, 1890, of the new superphosphate or chemical fertilizer works situated in Barton township near the city of Hamilton.

I found the buildings situated on a tongue of land running out into the Bay, and in a locality wholly set apart for manufacturing purposes of various characters. They consist of a frame building, an older part and a newer, the former being 60x40 feet, and the latter being 24x24 feet.

There are three stories, which may be briefly described as being devoted to the following operations:

Entering the building some three feet above the level on the second story, the raw materials are carried to the third story, and the operations begin there. The materials utilised on the premises consist of (1) bones; (2) tankage from lard vats in pork-packing establishments; (3) cracklings, that is the same class of materials from presses in knackeries and fat rendering establishments in different parts of the Province; (4) potash; (5) nitrate of soda; (6) sulphuric acid.

The stored materials, as bones, when it is thought necessary go into a drying kiln heated with steam coils, and are ventilated into the smoke stack some sixty feet high. Thence, with cracklings or other similar materials, the bones pass into the digester, this being a tank of heavy boiler iron, and is made perfectly tight where the top comes off by a rubber washer and numerous bolts; some water is added, and the digestion of the material goes on by steam pipes led into it, for from three to five hours.

When this operation is completed, the fat is forced by water from this tank into the grease tank, whence it is from time to time drawn off when warm into barrels and sold. The water then is forced by steam out of the digester into a more elevated receiving tank, and is again, as required, drawn from there into the digester and used over again several times till rich enough in ammonia, when it is boiled down in another "boiling down" tank, its solids being in the "mixer" to the other fertilizers.

The solid materials when digested are emptied from the tank into a room on the second floor 10x10 feet, which is fitted up as a drying kiln. It is constructed of boards lined with tar felt and galvanized iron-sheeting inside.

From it, as also from the boiling down tank, there passes a tight pipe to the fan in the engine room, and a very strong current constantly draws the vapors and volatile effluvia from the kiln and tank. A hood over the digester is similarly supplied with a vent pipe leading to the fan, to catch the effluvia and steam arising from the tank when the top is removed.

The material from the drying chambers is next ground in a strong iron mill on the ground floor; and the iron rings and other similar metallic materials are caught on their passage into the hopper on a magnetized iron bar, to prevent injury to the mill. The ground material thence passes to the dusting room on the third floor, where it is screened, the coarser materials returning to the mill to be ground again. The materials when ground fine are stored near by, and next pass to the "mixer" when different chemicals are added and mixed, making the various grades of fertilizer desired. From the mixer they are allowed to fall, and pass to different bins of the floor below; thence it is taken and after re-screening is packed in sacks for shipping.

On the second floor is the casing room. Here are dry-salted intestines from western packing houses, which, after soaking, are cleaned and scraped. The materials salted are not at all offensive, and the room with two or three alternate layers of tarred flooring and felting, presents a smooth, tight and clean appearance. The room has a ventilator leading, similarly with other tanks and room mentioned, to the fan. This is situated in the engine room, driven at 1,500 revolutions a minute, and forces the vapors and effluvia into a condenser (made of strong boiler iron) 4 feet in diameter and 30 feet in height. Partitions internally are utilized to aid condensation. From the top of the condenser the vapors are drawn into the ash-pit, and thence pass directly in the fire, being there consumed.

The boiler-room is very satisfactory. The fire was small but hot, and combustion seemed perfect. This is an important matter, and requires the constant attention of a careful stoker. Its horse-power of 60, with that of an engine of 35 horse-power made by reputable makers, ensures efficiency in its work with safety; while the dynamo driven by it for the purpose before mentioned, as also electric lighting by incandescents, are adjuncts wholly along the line of modern improvements in appliances which you seem to have kept steadily before you.

Such, in brief, is the sketch of the works which you have instituted with a view to supplying artificial fertilizers, and I have to congratulate you on the endeavor you are making to carry on a desirable and necessary industry in a scientific manner, which means in this case economical work, and, I trust financial remuneration.

Regarding the other object aimed at, the carrying on of the business in such a manner as not to create a public nuisance, I have only to say that I trust you will in this attempt be able to show that such works can be carried on without any discomfort to the general public or to yourselves. With the extension of the business, which I hope may take place, I shall expect to see more substantial buildings erected, and so constructed in walls, floors and ceilings, as to promote the greatest possible cleanliness and the greatest freedom from the dangers of fire. I trust that the Barton township council will see its way clear to placing your works in the legal position which your endeavors deserve, by granting you a license under Sec. 63 of the Public Health Act of 1887.

I trust that you will bring this report before them, and you may feel assured that I shall ever be ready to promote all scientific attempts to dispose of our refuse products in a manner compatible with industrial progress and public safety in the matter of health.

I remain,
Your obedient servant,

P. H. Bryce,
Secretary.

*Cheese Factories and Dairies.*—A class of nuisance incident to the development of dairy farming has of late years been the cause of much complaint to rural local boards of health.

The following quotations are taken from the annual reports of Local Boards of Health for 1890, and from the report of the Dairy and Creamery Associations for 1889 :

*London.*—The Medical Health Officer of London reports the examination of milk from 103 dairies, giving the best average of any year since inspection began, viz. : 4.10 per cent. of butter fat. The London inspection is the oldest established and shows the best results of any in the Province.

*Stratford.*—The Medical Health Officer of Stratford reports the inspection of various samples, most good, one with butter fat 2-34 per cent.

*Toronto.*—The Dominion Analyst, according to the Toronto Health report, shows more cases of adulteration of Toronto milk than that of any other place.

*Ottawa.*—The Ottawa inspection instituted only last year, shows that 73 milk vendors' premises were inspected.

*Guelph.*—Guelph has 18 milk vendors, no complaints made, but one crowded premises reported.

*Hamilton.*—Where the Medical Health Officer has done most systematic work he reports : total licenses granted, 222 ; total samples collected, 1,884 ; while the inspection of premises made, is reported as follows :—Very good, 53 ; good, 1,316 ; fair, 488 ; bad, 6 ; closed, 2 ; notified to get licenses, 33.

*Brantford.*—Twenty dairies with 450 cows. Every dairy inspected, some several times. Samples of milk analysed four times in a year.

*West Toronto Junction.*—All dairies inspected and reported in good order.

*Windsor.*—Thirty-six samples of milk were analysed, giving an average of 3.66 per cent. of butter fat.

*Woodstock.*—The Medical Health Officer notes an improvement in quality of milk, none coming below the Government minimum.

*Trenton.*—Notes examination of cattle and premises as made by veterinary inspector and advises closing of some dairy wells as being too near stables.

*Ingersoll.*—Has no inspector of dairies and no registration of vendors.

*Galt.*—The byres were inspected and found in a satisfactory condition.

*Dundas.*—No inspection of byres is reported, but is advised by the Medical Health Officer.

*Chatham.*—Through the medium of a school teacher, the Medical Health Officer found that scarlatina existed and was being secreted on the premises of a milk-vendor.

*Cornwall.*—The Medical Health Officer reports that the byres were inspected and found in good condition.

*Weston.*—The Medical Health Officer has instituted an inspection of dairies.

*Embro.*—This village is reported as having no milk inspection.

*Peterboro'.*—Is reported by the Medical Health Officer as having no inspection of dairies.

*Wellesley Tp.*—The Medical Health Officer reports the cheese factories as inspected.

*Wallace Tp.*—The Secretary reports that so far no cheese factories have been reported against.

*Sidney, Hastings Co.*—I have to regret that the cheese factory nuisance is so lightly treated by owners, and must urge on the Board the need for greater stringency in the disinfection and proper drainage of the same to prevent any pollution of the premises or atmosphere.

*Southwold Tp.*—The inspector reports that cheese factories, dairies and school-houses received the usual inspection.

*Normanby Tp.*—Three creameries and two cheese factories are reported as being in a fair state of cleanliness.

*Nissouri Tp. West.*—Several cheese factories were visited on complaint and important improvements were ordered.

*North Crosby Tp.*—The cheese factories were regularly inspected and found kept in proper sanitary condition.

*Minto Tp.*—The cheese factories have been kept in a creditable manner.

*Metcalf Tp.*—The cheese factories are closely watched and improvements made.

*Middleton Tp.*—The cheese factories were inspected.

*Humberstone Tp.*—The cheese factory was inspected and kept in good condition.

*Hawkesbury Tp. East.*—Owners of cheese factories were notified to keep their premises clean.

*Hope Tp.*—Cheese factories were inspected and ordered to be kept clean.

*Gainsboro Tp.*—A cheese factory has been inspected and found kept clean.

*Flamboro' Tp. West.*—The inspector has visited and granted permits to the owners of twelve slaughter houses, having found them all in a fair sanitary condition. He also granted permits to twenty-three milkmen, their premises being, with two or three exceptions, in a good state of cleanliness. The two or three were ordered to clean up their premises, which order was promptly complied with. The cows in the dairies aggregating 324 were found healthy and in good condition.

*Elmira Tp.*—All owners of cheese factories were notified to clean up their premises and keep them clean, and they have invariably kept factories and surroundings very clean and orderly.

In a former report I referred to the prevalence of an existing nuisance in many of the cheese factories of this township, viz :—the feeding of a large number of hogs on the premises.

Wherever this is practised the results must be not only bad for the citizens who have to live in close proximity, but also deleterious, in my mind, to the cheese manufactured on the premises. This is a state of affairs which will not be easily remedied, inasmuch as nearly all cheese factories are the property of a given number of patrons who save a great deal of time and expense by having the hogs fed on the premises of the factory, instead of taking the refuse home and feeding the hogs there, and allow the hog to roam at large in the summer months, as all laws of sanitation demand that he should. Therefore this question is one that any council elected by the people, many of whom are patrons, is not likely to grapple with as their term of office would be cut short. Therefore the duty is one that I think should be relegated to the Government, and when made law rigidly enforced by the Government inspector and no option allowed, and I am sure the present suffering makers of cheese who have to submit to their employers, will consider the removal of this nuisance a boon of no trivial nature. Then as a people we can report a very important article of Canadian industry with a conscientiousness that we have done nothing to injure the quality of it by any carelessness on our part.

*Elderslie Tp.*—Board inspected cheese factories and pronounced everything in good order.

*North Dumfries Tp.*—I have visited only one school which I found satisfactory. The Board has at different times during the year called the attention of the trustees to the requirements of the law relating to the disposal of all kinds of refuse, and to the necessity of keeping the schools, yards and outhouses clean. They have also been advised to pay particular attention to the water supply for drinking purposes.

*Downie Tp.*—We would suggest that the practice which prevails of converting our rivers and streams generally into common sewers by our cities and towns, and also by the erection of cheese factories along their banks and using the same as depositories for whey and other offensive matter, should be prevented by an Act of the Legislature.

*Abstracts from Reports of Dairy and Creamery Associations.*

Inspector Downham says :—

"Where I found bad drainage I found bad flavored cheese."

Inspector Williams says :—

"I visited thirty-one factories. Of the thirty-one, two were extra clean, twenty-one clean, and the balance not as clean as should be, and some positively dirty. Two had water not at all fit for the manufacture of cheese. Two-thirds of the factories have no drains ; they run their slops into the factory whey tanks. In two or three it was positively unwholesome around. Many otherwise very good curing-rooms, have had no provision made for their ventilation whatever."

Mr. McPherson, of Lancaster, said :—

"I have had a weekly inspection made of my factories at the cost of nearly $50.00 per year a piece. I think I can safely say that fully one-tenth of the farmers spoil their milk by allowing the cows to drink impure water from satgnant pools."

Cheese Inspector Bissell says :—

"Factory men do not get pure milk from cans sitting all night on a milk stand that is attached to pig pens, etc."

Mr. Derbyshire :

"Feeding of the cow is important. Cows are allowed to drink out of cesspools, drinking impure water."

Prof. Robertson said, *re* dangers to butter making :—

"There is grave danger in the careless neglect of some creamery patrons to properly provide pure water, wholesome feed and free access to salt for milk cows. Three-fourths of the factories are unfit to make cheese in."

N. A. Fields, inspector :

"In some factories I visited this summer I could look down through the floor and see the festering compound beneath. Among minor troubles, are worn out machinery, improper drainage, etc."

James Whitlaw :

"I inspected milk in forty-five factories, and in some localities I visited I had the unpleasant duty of sending letters to patrons that their milk was impure, caused frequently by impure or stagnant water. We have inspectors of different callings paid by the Government, and the day has come when we must insist on having milk inspectors."

The titles of the following Acts show how urgent is the need felt in the matter of an important industry :—

Ontario Statutes, 1888.—Page 51, chap. 24, An Act to provide for the incorporation of cheese and butter manufacturing associations.
Page 77, chap. 31, An Act respecting creameries.
Page 78, chap. 32, An Act to provide against frauds in supplying of milk to cheese or butter manufactories.
Ontario Statutes, 1890.—Page 141, chap. 61, An Act to amend the Public Health Act in respect to the sale of milk and meat from animals affected with tuberculosis.

Some of these reports supply much food for reflection. Medical health officers state what is stated also by the dairy inspectors, that the conditions on the premises, apart from health conditions, must continue to be the judge of the quality of cheese and butter supplied. Such is illustrated by the report for Sidney Township in Hastings, and yet more fully by that for Elmira Township. In the latter the hog-pen nuisance is especially emphasized, and rightly so, for as Professor Wynter Blythe, a London medical health officer says :—"The excreta of pigs is peculiarly offensive ; there is no more penetrating stench than that arising in cleaning out a pig-sty. . . . The species of feeding most to be condemned is, however, that practised by many butchers, viz., giving to the pigs the uncooked debris and blood of the slaughter-house ; it is in this way that pork is so liable to be contaminated with tubercle and parasites."

Little needs to be added to the words of the dairymen's inspectors. They view the matter from the purely economic standpoint, and their opinion is the same as that from the health standpoint. The provisions contained in the amendment to the Public Health Act for 1891, supply a means by which these evils can be minimized. Were a County Officer of Health appointed he would be in a position to systematically regulate these many matters, and to supply methods by which filth removal could be effectually carried out. The methods and cuts which are given under the article on "Sewage Disposal," may with advantage be applied to the removal of whey and floor washings to safe distances from factories, and tankage arrangements at the outfall might be made so as to practically do away with the serious evils complained of.

## VI. PUBLIC WATER SUPPLIES.

The year has been fruitful in projects for supplying public water to various cities, towns and villages in the Province. Some of the reasons which may be given for this notable development are :—

1. The growth of the municipal idea over the individualism which characterises new communities, composed of those who have, as members of a scattered or rural population required, or known, little of the needs of the people in more densely settled communities.

2. The increased pollution of soil around dwellings as residence becomes longer, with the consequent outbreaks of such diseases as typhoid, which have come to be considered the index of filth pollution.

3. The enterprise of water companies, and others whose business interests demand an increased market for manufactured products.

4. The good investments which in this Province and elsewhere, have been found, both by companies and towns in the establishment of public waterworks.

Such are the principal causes which have operated, and which have received a notable impetus from the establishment of a Provincial Board of Health in 1882, and of local boards by the Public Health Act of 1884.

It might be said by some that the development of such works is altogether independent of the latter influences ; but it may fairly be said that the growth of that public opinion, the formation of which is necessary before money grants will be made for such works has especially marked the last decade. How many such works have been constructed during the past eight years has been referred to in a previous chapter ; while I may quote from the reports of the Board on plans submitted to it during 1890, to show how this growth is being accelerated.

These reports are of much interest, both from the scientific and practical standpoint, since they very well indicate that the public health problem presents itself under varying conditions according to the source of supply of any particular water, and the practical problem of how it may become financially possible for any particular municipality to take advantage of some local supply of water.

Manifestly the two problems cannot always be the same, and it is due to this fact that to your Board has very properly been committed the task of bringing about a *rapprochement* between the two.

To illustrate, I quote first the reports adopted by the Board on the Ingersoll and St. Thomas waterworks, as presenting one class of waters.

### *Ingersoll Report.*

Toronto, February 24th, 1890.

*Messrs. Moffatt, Hodgkins & Clarke, Watertown, N. Y. :*

Dear Sirs,—In complying with your request that I report to you and to the town council of Ingersoll my informal opinion on the sources of water under consideration as possible for a public supply of water for the town of Ingersoll, I beg to say that I have considered as carefully as the opportunities at my disposal have permitted the whole problem, and am of the opinion that while the superficial deposits of the Saugeen clays, sands and gravels which appear as surface deposits in the Ingersoll district are found to be generally most certain sources for abundant supply of pure water for private purposes, yet the question of what areas are needed to secure an abundant supply for public purposes must be carefully examined into ; since in most cases the water is found relatively at shallow depths, and hence the quantity becomes dependent upon the extent of upland which is contained in any given gathering-ground or watershed.

From the examination made at the time of my visit I would say that the gathering ground of the area under consideration seems to include the area beginning some five miles distant from the river at the point where Whiting's creek takes its origin, and extends westward, including the area supplying Marsden's creek, and the springs in the marsh ground to the immediate west of it, as well as the main branch of the Choate creek and the shorter subsidiary branches. Similar superficial soil deposits extend westerly from Brantford to London, and the subterranean waters throughout the whole district, are as regards quality, of an unexceptional character. Manifestly, therefore, we have to consider only two questions : First, the dangers of the contamination of such subterranean water after becoming a surface water ; and second, the amount of supply from any given source.

Regarding the first point, it may be said that all these waters at the point of appearance at the surface are to be considered as sterile, although they may contain small amounts of organic matter in solution.

In contact with the air and surface with soils rich in bacteria, as also receiving surface drainage, they at once become inoculated with bacteria, and the question of their safety as a water supply depends upon their liability to become inoculated with pathogenic bacteria, as opposed to the common water bacteria, which in themselves are not injurious.

It is plain, therefore, that the nearer the point of exit from the deep layers of the soil the water is taken, the greater the certainty of its being free from these dangers to health; and other things being the same, the farther from such source, the greater the possible danger of contamination. The water, therefore, to be chosen from this standpoint alone, is Marsden's spring, at the point of issue from the soil. The others, were such conditions similarly present are, probably, equally desirable, taken at their sources. The second water to be chosen from this point of view is Choate's creek, at that point nearest its source compatible with the question of supplying sufficient water. The least desirable, manifestly, is Whiting's creek. It receives, I understand, considerable surface drainage from farm lands, and there will be a growing danger of its contamination as it nears or enters the town. I have no doubt that this last named creek, with its dangers, made by care, as small as possible, could be rendered a comparatively good source of supply, but the danger of contamination would always be somewhat of a source of anxiety, since the extent of area to be guarded is much greater than in either of the others.

The second part of view is that of quantity. From the calculated flow of Marsden's spring there seems to be no doubt but that in a short time this would become insufficient to meet the demands of the town. Whiting's creek would seem to be sufficient to meet any prospective deficiency for a few years; but if it be true, as is stated, that it becomes dry occasionally in the latter summer months, when the demand is greatest, while the dangers of contamination are increased, it would surely seem proper to be certain of an ability on the part of the company to meet these contingencies, as well as of guarding its purity before this water be accepted, as in every way suitable.

Regarding the Choate creek at any point above and near the pond, there would seem to be a certainty that as far as quantity is concerned, the supply from this source would be ample for every contingency. This, of course, is on the assumption that the soures of supply, *i.e*, the timbered areas where the springs rise, be preserved intact, since, as every one knows, that on their preservation, depends largely the continuance of the supply in hot weather. It is further evident that its short course to the pond, (where I assume the pumping station would be placed), with a considerable portion of its course through forests, will largely allow its volume to remain undiminished by the great evaporation which takes place from exposed watercourses during the heat of summer, and which accounts for the greatly lessened volume in dry weather of Whiting's creek in its course of five miles. The short course similarly lessens the dangers of possible contamination, which dangers can, however, be guarded against only by the company acquiring the right to protect the stream, both at its source and along its course.

Should the company consider favorably the Choate creek scheme from the financial standpoint, (this making the previous proposition to be somewhat modified), I feel certain that both as regards quantity and quality combined, the town will receive better satisfaction from this than from any other source of supply.

I would advise in this case, however, and much more in the event of the Whiting creek being selected, that the water be taken from an ample well supplied from a point in the creek above the pond, and that a proper aarangement of filter-bed be made for upward filtration, whereby the suspended matters may be removed with a portion of the soluble organic matter, and that the well, made of concrete, be maintained as a settling basin, which by a compartment arrangement would make cleansing of it as often as necessary, easily possible.

Trusting this may be satisfactory,
I have the honor to be.
Yours very truly,

PETER H. BRYCE,
Secretary.

The Secretary's report was approved of; the Choate creek supply has been adopted by the town, and has so far proved most satisfactory.

The following letters from the engineer of St. Thomas, give details of the water problem of that city.

ST. THOMAS, June 14th, 1890.

P. H. BRYCE Esq.,
*Secretary Provincial Board of Health,*
Toronto, Ontario.

DEAR SIR:—Your telegram to our city clerk of June 12th, on account of absence reached me to-day.

Our present waterworks supply is taken from Kettle Creek, which has its rise on the table lands between here and the River Thames, and in springs that have their outlet along the banks of the creek. All the water, unless in times of freshet, is spring water, but in times of freshet the wash of the water, the current being rapid, contains a large amount of sediment, principally clay. Our present works are situated within the city limits, and there is a certain amount of drainage and refuse from gas works which empty into the creek above the present intake.

Our proposed scheme is to remove the present works about a mile and one-half up the said creek, and outside of any possible drainage from the city. We will construct a dam in the creek to supply the works, and the water will all be filtered through a system of filters, which will be furnished by the Hyatt Co., of New York. The same principle of filtration is used by the provincial government in Kingston, and they are now introducing a plant at Mimico.

Our water will be pumped direct from our mains through these filters into the city. We are at present putting in a filtering plant with an easy capacity of 1,000,000 imperial gallons per day. In times when the water contains much sediment we will use alum as as a coagulent. It is our intention to put in about fifteen and one-half miles of mains besides what we have at present.

In October of 1889, we had an analysis made of the water taken from the point where we propose placing our works, by Prof. Albert R. Leeds, and in December an analysis made by Prof. W. H. Ellis, both of which I enclose. You will kindly return these after you are through with them. If there is any other information that I can give you in this matter, kindly let me know and I will be pleased to do so.

Yours truly,

JAS. A. BELL,
City Engineer.

ST. THOMAS, June 27th, 1890.

PETER H. BRYCE, ESQ.,
*Secretary Provincial Board of Health,*
Toronto, Ontario.

DEAR SIR:—I am in receipt of your favor of the 25th inst., and have carefully noted the contents. I will take pleasure in laying it before the board when they meet. I enclose you a sketch of Kettle Creek showing position of springs, also showing location of our new works, as also the whole course of the creek to its head, which is in the township of North Dorchester, in the county of Middlesex, where there is a small lake about one-quarter of a mile by one-half of a mile in extent.

The creek throughout its whole course is confined to a channel. There are no swamps along its banks that contain any vegetable matter. The lands adjoining the creek are used for agricultural purposes, a large amount of it being in pasturage. The fall of the creek is about ten feet to the mile, and the bed of the creek generally is coarse gravel. I might give you a little sketch of the efforts the council have made the last few years in regard to getting a supply of water for domestic purposes.

In 1884 and 1885 I was instructed by the council to make tests at what is known as Locke Springs, which are situated on and contribute one of the main feeders of Kettle creek. There are a large number of these springs situated in the locality I have marked, and all evidently come from the same source, viz., through a stratum of sand lying under about twenty feet of hard-pan. I sunk wells through this hard-pan and put in a steam pump, and found by pumping water down low in the well that I could effect springs situated about six hundred feet distant, showing that their source was the same altogether. We spent at that time over $1,600 in these experiments, and although that increased the flow to a certain extent, it was not nearly sufficient to supply our wants.

In 1887 the city made a contract with Andrew's Bros., of New York, to test the water around the city, and they had a gang of workmen here for a considerable time making tests; some of the tests were made immediately below where our new works are to be built. These tests were made to a depth of from thirty to fifty feet. In this case also the result was a failure.

In 1888 the county council sunk a well at the court house to a rock about three hundred feet deep and found a quantity of water which you have seen an analysis of, on account of the water not coming within thirty-three feet of the surface and when pumped with a three-inch pump, being lowered to sixty feet from the surface, it was impossible without a very large outlay to really test the capacity of this well. From this test, I was inclined to think that there was a general bed of gravel lying over the rock, and that if we would sink a well on the flats (which are about one hundred feet lower than where the court house well is sunk) that we would be able to strike a flowing well. The council also thought that there was a probability of settling this much discussed question of water supply, and granted $1,000 for the purpose of making the test. We put down a six-inch well to the rock on the flats two hundred feet deep, but instead of getting good water, we struck quite a large stream of water strongly impregnated with sulphur; this well was continued to a depth of four hundred feet with no better results.

The whole question of water supply was then left by the council to a committee of six members appointed by them, and a like number were asked from the Board of Trade to act with, advise and report on the best feasible schemes for supplying the city. After considering the whole matter carefully in all its bearing, they called in Mr. William Haskins, city engineer of Hamilton, to give them his opinion, and he, after looking over the matter and examining Kettle Creek and its sources, recommended the present scheme. Acting on his report, this joint committee appointed a deputation of three to visit a number of cities in the United States to enquire into the process of chemical filtration and the results obtained from it. This deputation visited a large number of places in Ohio, Indiana and Illinois, and after seeing the filters at work and the results obtained of cleaning and purifying as shown by analysis at the various places, reported unanimously in favour of the present scheme, and the result was, that a by-law was submitted to the people and carried.

I think you will admit that we have pretty thoroughly examined every probable way of getting a supply of water for domestic purposes, and I may say that this joint committee and the city council were one in the belief that the proposed system is the best we can get without going to Lake Erie, which is entirely beyond our means. I may also say, that it is the intention of the committee, after the works are in operation, to have an analysis made monthly for one year by Prof. Ellis, showing the purity of the water supplied. This they intend to do to overcome the prejudices of those parties who objected to the present scheme.

Of course, I cannot understand myself where the discrepancy should exist between the analysis made by Prof. Leeds and Prof. Ellis, the waters sent to them were taken from the same place, viz.: where our proposed works are to be situated. I may also say that the present water-works board will do everything in their power to keep the waters of the creek from being polluted above the intake, as they are fully alive to the fact that unless they can show that the water is pure and perfectly good for domestic use, the revenue to be derived therefrom will not be as large as they anticipated.

I will be most pleased to give you any further information regarding this matter in my power, and trust to hear from you shortly that your committee on public water supplies has given our scheme favourable consideration.

I remain,
Yours truly,

JAS. A. BELL,
City Engineer.

The Board approved of the latter scheme which it will have been seen has presented many difficulties in the following resolution.

Moved by Dr. Bryce, seconded by Dr. Macdonald;

That after a careful consideration of the plans and the correspondence in connection with the measures which have been taken for obtaining a satisfactory water supply for the city of St. Thomas, this Board is of the opinion that should the source of supply along the upper portion of Kettle Creek be carefully guarded against contamination from such sources of pollution as barnyards, privies, etc., and should the depositng and growth of vegetable matter along the banks and in the impounding reservoir be prevented the proposed source of supply, in lieu of any better, is considered satisfactory to the Board.

This Board is, however, of the opinion that it will be wise for the city to develop what is a probable source of ample supply in the neighbourhood of the springs mentioned in the letters, by a method similar to that which has proved so successful in London. The Board is further of the opinion that from the abundant existence of springs in the immediate vicinity of the town, and from the readiness with which water of undoubted purity can be obtained from driven wells, the town council will do well to develop these sources of supply in the interest of the public health.

The Kincardine problem presents a different phase, as will be seen in the following report thereon:

*To the Chairman and Members of the Provincial Board of Health:*

GENTLEMEN.—After a careful consideration of the plans forwarded and an enquiry pursued with a view to obtaining the main facts in the case, your committee has pleasure in recommending for formal approval the scheme proposed for supplying the town of Kincardine with water, supplementing its details, however, by the recommendations to be hereinafter referred to

It will be seen from the copy of the contract received, that the water-works company agrees to supply the town from Lake Huron with water taken such a distance from the shore "as shall at all times and under all circumstances secure a supply of pure, clear, wholesome water for domestic purposes."

The report of the engineer, Mr. Warren, likewise received, points out that the depth of the lake water out a distance of 3,400 feet is about 30 feet, and informs us that at 1,000 feet from the shore the depth would be about 13½ feet. This is the proposed length of lake pipe.

To enable the Board to properly understand this matter, it may be stated that in front of Kincardine there is a long sand beach or shore for several miles with a very gradual inclination seawards, indicated by the fact pointed out by Mr. Warren, C.E., that at 3,400 feet from the shore there is a depth of only 30 feet. The wash, as might be expected on so shallow a shore, keeps up a constant disturbance, and as the engineer points out, the water for months holds in suspension silt, or is "roily."

This, however, cannot be said to be an impurity detrimental to any water if a little care is used in building a settling basin of sufficient capacity to allow sedimentation to take place. The contract in this particular could not, we think, be very well evaded, and we have no doubt but that the company, prior to making the agreement, has fully considered this point.

A much more important matter, and one on which your committee has sought to gain explicit information, is the nature of the possible contamination by sewage from the town. To give some adequate idea of what this danger might be, it may be mentioned that the total present population of the town is 2,960, and cannot be said to be increasing much, or that there is any likelihood of a rapid future increase. There are several branches to the stream, the Penetangore, which flows through the town and pours whatever impurities it contains into the lake. There cannot be said to be much at present, but if a general sewerage system be in the future introduced, undoubtedly provision for disposal of the sewage by some way other than by pouring it into the lake would have to be made. Dr. DeWitt H. Martyn has stated to your committee that there will be ample facilities for disposing of the sewage in the future on the sand reaches by means of a sewage farm. That this will be necessary, your committee thinks, is proved by the statement of the engineer "that the direction of the currents, nearly always, is to the north, or in the direction of the water-works main, as the prevailing winds are such as to cause the currents to go in that direction."

In view of all the facts as bearing upon the welfare of the town, both present and prospective, in the matter of economy and health, your committee desires that these facts should be fully set forth in its report, and is of the opinion that it would be well for the contracting company to examine the question of springs or bored wells, since the general westerly trend of strata leads to the supposition that such a source as that at Goderich could very easily be secured. This would do away at once with the expense of a lake pipe, the necessary storage for sedimentation, as well as the danger to be apprehended, whenever a sewerage system is constructed, of the pollution of the drinking water.

The sewage might, your committee thinks, be allowed to be poured into the lake were the water taken from wells situated so as to be free from pollution. It may be further pointed out that whenever the scheme for a sewerage system comes before your committee for approval, its approval would be conditional upon some adequate protection being given to the water supply.

All of which is respectfully submitted.

J. D. MACDONALD,
P. H. BRYCE.

The source of proposed supply was unimpeachable as regards both amount and purity; but a possible difficulty as regards the future purity is pointed out, while the suspended clay in the water during storms making the lake water turbid, introduced a difficulty between the town and the contracting company, which at one time threatened to deprive the town of the proposed works with a resulting law suit. I visited the town and after an inspection and a conference between the town council and the company suggested a compromise, which was accepted.

The result has been a splendid system of water-works, the company having sunk a pumping well in the sand beach, below the lake level, from which a clear water freed from clay is being pumped.

Belonging to this class of waters and intermediate, it might be said between a lake and ordinary river supply, is that proposed for the town of Niagara-on-the-lake.

The specification states :—

"Conduit pipe to be not less than 12 inches internal diameter, and about 800 feet in length laid out on the bed of the Niagara River, the river end of pipe to have a suitable crib attached three feet square, 55 feet high, built of steel plates and angle bars 1¼ inches thick, crib to have on three sides slatted or grated openings one foot down to admit water."

"Trench for conduit to be excavated so that the top of the pipe at any point will be not less than three feet below the level of the water in the river, and follow a continuous and uniform down grade into the river until a depth of about 50 feet of water is reached, the pipe to be carefully packed and trench properly filled in."

Your Board in view of the river being exposed to extended pollution above the point where the intake pipe enters the river, adopted the following resolution :—

Moved by Dr. Macdonald, seconded by Dr. Bryce :

"That the Board having carefully examined the source of the proposed water supply of Niagara-on-the-Lake, as also the analysis of the water submitted to Dr. W. H. Ellis, Dominion analyst, find that the quality of the water is placed by him in the second class ; and that this Board deems it desirable that the town investigate the possibility of obtaining water of undoubtedly first class purity, before the Provincial Board is requested to approve of source of present proposed supply." Carried.

While it may with much truth be said that a river with such an enormous volume of pure water as Niagara naturally has, will dilute sewage to an enormous degree, yet it has already become possible to detect the presence of Buffalo sewage in the river at Niagara Falls.

The town is fortunate, however, in having alternative sources of supply should it at any time in the future be found to be pumping a contaminated supply.

The succeeding reports present another class of waters, which possess an especial interest in view of the inevitable dangers attaching to rivers decreasing in amount, with an inevitable pollution to a greater or less extent owing to increasing population, and the growing needs for pure water. This class includes underground waters, whether from springs, artesian wells, or driven wells. Manifestly the difference between the first and other kinds in the class consists in springs being possible of pollution after their appearance at the surface, or where they have flowed in a shallow water stratum for some distance and are there exposed to soakage pollution.

Belonging to this division of springs is the Galt supply.

The report submitted by the Engineer states :—

"Within the corporated limits of the town are a great many springs, the continued discharge from which would be ample for all requirements, but unfortunately they are widely distributed in the south-west part of the town. However, on a small area in the vicinity of the intersection of River Road and near Henry Street are several large springs, the combined flow from which amounts to about 190 U.S. gallons per minute, or 260,000 per 24 hours. The water from these springs is exceptionally pure and soft."

Similar to the Galt source is that of the town of Walkerton. Says the Engineer's report :—

"The collection of springs situated west of the Grand Trunk Railway track opposite the station, issuing from the ground and flowing easterly through the town, affords a most favorable source from which to obtain a supply of water for your town. The surface of the ground in the town rises gradually towards the west, and the ground where these springs rise is probably the highest part, and is sufficiently elevated to give ample pressure for domestic purposes at all parts of the Town, without having to resort to pumping.

Such sources are unexceptional as regards freedom from organic impurities, unless as in cases where, as in the town of Markham, the town happens to be situated on the rising ground, on the plain which dips away towards the stream to the west, and along which declivity appear springs, some of which are being utilized for a public supply. In such cases as has been pointed out by the Board's resolution approving of the source, it will be necessary for the village to provide by the removal of privies, soakage from stables, etc., against the pollution of a pure water at a point just before its exit at the point of pumping.

Dr. Rae moved, seconded by Dr. Macdonald :

"That the system of public water supply for the town of Markham, now submitted to this Board, be approved of, conditionally upon the water being found upon analysis of a satisfactory degree of purity, and further, that measures satisfactory to this Board be taken by the municipality to preserve the continued purity of the same." Carried.

The artesian well while the same essentially as the driven well, may vary from it inasmuch as in some cases it may pierce the soil or rock many hundred feet, and also overflows, instead of being pumped. It may further possess notable mineral characters often found in deeper strata.

That it is good from the standpoint of supply may be gathered from the success which has attended the Barrie works.

The following is the report adopted by the Board :—

TORONTO, May 15th, 1890.

*To the Chairman and Members of the Provincial Board of Health :*

GENTLEMEN,—It will be within your recollection that the Secretary of the Board, a member of your committee on water supply and sewage disposal, visited Barrie last summer at the request of the Mayor, and made a general survey of the different available sources of supply, which were Lake Simcoe, several creeks and artesian water.

Owing to the fact that the lake is at present being polluted with some sewage, and from the fact that it would be a matter of large expense to carry the water main to such a point as that there would be no danger of present or future contamination by sewage which might be poured into the Kempenfeldt Bay, your Secretary concluded that if further examination made it appear satisfactory from the engineering standpoint, the sanitary requirements would be met by resorting to the artesian source for a supply. The whole town was carefully surveyed, and these various matters indicated to the Council and Local Board by your Secretary were carefully enquired into by Mr. W. C. Chipman, C.E., who recommended that the water be taken, from artesian wells situated at a convenient point, to a central pumping station ; and that provision be made as will be seen by reference to a copy of a contract made between the town of Barrie and the firm of Hinds & Bond, contractors, for taking water from the bay in case of an emergency, as that of fire, by a pipe laid thereto, the key of which is to be held by the Mayor.

Your Committee takes much pleasure in reporting favorably upon the proposed source of supply. It further wishes to draw attention in its report to the frequently serious effects which have arisen in different towns from the disturbance of a soil, saturated with organic matters, by excavations. These materials are exposed to the influence of free oxygen and heat, by means of which an exceedingly rapid development of bacterial forms results. These when the soil becomes dry are carried into the air as dust, and the history of different towns has shown an unusual prevalence of diphtheria during the construction of water-works, unless the precaution is taken of re-depositing disturbed soil, within forty hours, if possible, from the time it has been excavated, taking care that pure earth be deposited on the top of the drain.

It is well that it be further pointed out that waters—even from artesian sources—if stored for many days in warm weather, in reservoirs, may have developed in them bacteria, owing to the presence of an amount of organic matter which keeps increasing from day to day in said reservoir. Hence a stand-pipe for a steady supply, obtaining its water from a pumping well, is the ideal to be sought after in the matter of purity.

We recommend the adoption of the report.

PETER H. BRYCE.
J. D. MACDONALD.

I have been informed by Mr. Chipman, the consulting engineer, that one single well bored to a depth of about 120 feet, is supplying much more than at present is required for the needs of the town.

The following report on the Orillia water-works gives an interesting illustration of how old-fashioned methods may depreciate the quality of a first-class water.

"Your committee next returned to the town, passing on the way a considerable stream with a mill thereon. This stream rising a mile or two above supplies the amount of water which, if properly taken, would be equal to the present necessities of the town. Keeping along the ridge we came to the present low-level reservoir which is built of wood, and we were told holds a day or two's supply of water. No one could give us accurate data as to its capacity or the amount of water daily consumed. The top of the reservoir, as is also the case with the high-level reservoir, is made of logs laid as close as convenient and covered to some extent with gravel. Decay was everywhere apparent and no regular aeration of the reservoir taking place, the water cannot for a moment be assumed to be in a good condition, although flowing from springs or artesian wells of unexampled purity.

"The present supply seems to be mainly obtained from a boring 7 inches in diameter down to a depth variously given from 100 to 180 feet. The water rises high on the hill-side near the surface and is conducted by a wooden pipe to the reservoir, whence a portion flows to the town and another portion is pumped to the high-level reservoir. From statements made by Mr. Robinson, C.E., and by observing springs at various parts on the hill-side, there would appear to be no doubt that an impervious bed of clay tolerably constant in its occurrence and level underlies the surface of superficial sands and gravels which form the water absorbing and carrying strata above the town. This being the case your committee informed the gentlemen accompanying them that there seemed to be no doubt as to the purity of these artesian and spring supplies, and that could the question of quantity be settled there could be no doubt, both from the standpoint of economy and purity, that a series of wells on the hill-side would fulfil every requirement in a high degree.

"The question of supply seems capable of an approximate determination from the fact that the bored well, which has been down for probably ten years, is stated to give a steady supply of 50 gallons per minute, or 70,000 gallons in 24 hours. Assuming that a population of 4,000 consumes 50 gallons per diem the maximum total for many years—200,000 gallons per diem would be required. At this rate three wells of the above capacity would readily supply all the water required.

Your committee would therefore advise that wells be sunk on the terrace where the pumping station is placed, where in all probability the water layer reached in the above artesian well would be reached without the same depth of actual boring being necessary. It would be well to put them at some distance apart so that each can have a large area of water to draw upon. If this prove successful your committee would recommend that in addition provision be made so that by pumping and gravity the town may receive water for daily purposes, a standpipe be erected of sufficient capacity on the height above the new school building as a reservoir for emergencies, as fire, etc., and for giving a steadier pressure in the mains —if found advisable.

"There are doubtless other sources of supply for the town—indeed it seems exceptionally well provided with first-class water—such as Lake Couchiching, Lake Simcoe and any of the several creeks which were pointed out; but with the plant where it is the limited expenditure necessary for obtaining the supply and the certainty of its absolute purity from the sanitary standpoint, your committee unhesitatingly recommends that borings be made and tested before any other source of supply be utilized.

"With regard to creeks as a supply, it is doubtless true they can be made safe sources of supply, but this can be done only with difficulty as they must be taken near their source in springs—the nearer the safer, as you then realize more nearly the condition of an underground water. This often means an expensive line of mains with the necessary pumping well, etc. If not taken near the source the contamination from swamps, manured lands, cattle and refuse of all kinds is more or less inevitable. And further, the water if not taken close to its source is very subject to the effects of evaporation during the warm months, while at the same time the high temperature makes a ready culture medium for any bacteria gaining entrance thereto. Some of these difficulties are likewise liable to occur with the use of lake water, illustrations of which have been already set forth in this paper in connection with the asylums."

Respectfully submitted,

J. D. Macdonald,
P. H. Bryce.

That this artesian source of supply should be viewed with favor is natural, but it is a matter of some surprise that in a town with creek water near by, and with two beautiful fresh water lakes, Couchiching and Simcoe in the immediate vicinity, an artesian source should have been preferred.

The following preliminary report, made at the request of the town of North Toronto, is interesting as indicating another method for utilizing underground waters :—

### Report *re* Public Water Supply for North Toronto.

*To the Chairman and Members of the Water and Light Committee of the Town of North Toronto:*

Gentlemen,—Having undertaken at the request of the chairman of the committee the investigation of the possibility of obtaining a supply of water for public purposes from the elevated grounds lying to the west of the town, I beg to report that I have made a general survey of the district and herein desire to submit some general conclusions based upon the cursory examination made.

Before referring to the immediate matter of my report, I desire to indicate a few of the principles underlying the problem of obtaining water supplies from underground sources.

1. The source of all water, whether surface or underground, is the rain. A large part of what falls on the surface of the ground passes rapidly by creeks and rivers to the great lakes and ocean.

2. The smaller reservoirs, as ponds, lakes, etc., lose by evaporation more than the total rainfall of the year upon their surface, and whatever permanent supply they may have is due to their receiving underground water flowing into them through the water bearing sands and gravels situated on higher lands.

3. These permeable sands and gravels are the great storehouses of all water supplies since there soaks into them, roughly calculated, 50 per cent. of the annual rainfall. This water passes downward during those periods of the year when the rainfall is greatest and the evaporation least; and, unlike the water of streams, its movement in the soil being very slow, it is not subjected either by evaporation or rapid movement towards the lower levels, to those losses peculiar to surface streams; while these underground streams are regulated by the same physical laws of flow which govern all surface streams.

4. To estimate the amount of water which can be obtained from any water-bearing stratum, we have, in the same way as in the lake basin, to estimate first the area of ground it covers; *i. e.* the water-shed which drains to it, and, second, the amount of this water which can be collected. Manifestly the problem of estimating this amount becomes a more difficult one than that of a lake maintaining an average level throughout the year; but the constancy of flow of underground streams is an element greatly favoring their utilization when once the extent of their gathering ground has been ascertained.

5. The constancy of supply must depend upon the ascertained continuity of the underlying impermeable stratum or hardpan, and the measures which are available for collecting water. The continuity of the hardpan having by investigation been determined, we can prevent the escape of water from it by, if

necessary, throwing a breast-work or dam across the course of this underground stream; but where the dip of the hardpan is small it can be collected by sinking in the hardpan collecting basins to a level lower than the water-bearing sand and gravel, which method can be added to by laying series of perforated tiles across the course of the water-streams, and thus lead it more rapidly to the collecting basin.

6. Given a sufficiently extensive gathering ground, measures must be adopted such as will serve to collect the water as fast as we require it.

(1) Applying these principles to the problem under consideration we find that at a point some 2,400 feet, or less than half a mile west of the town along Kensington avenue, there is a widely extended bed of sand and gravel of some four feet in average thickness lying on top of an impermeable bed or hardpan some 40 feet above the general level of the town. The beds of sand and gravel maintain from examinations made at different points a remarkable constancy both of level and composition.

(2) From openings made at different points down to the water bearing gravels, we are enabled to say with tolerable certainty that this water-bearing stratum extends to at least 100 acres; and further, that the appearance of springs on the 2nd Concession, points to this water-bearing stratum extending over a much wider area than that wherein our excavations have been made.

(3) As regards the amount of water, it is capable of yielding, we may say that if the soil above these gravels should absorb 50 per cent. of the rain annually falling upon it, these gravels would receive water enough to supply 100,000 gallons for 350 days. What is required is some efficient method for collecting this water.

(4) The openings made seem to show that the hardpan has a general level east and west with a slight southerly dip; but as the water appears as springs on at least three slopes, and probably on a fourth, it would seem possible to collect it on any or all of them. From these points where water may be seen flowing now, we have obtained a flow of over 50,000 gallons. All these supplies have been known for years as being never-failing, showing apparently no decrease in the summer.

It must be remembered, moreover, that none of these were natural springs, but that all were developed by tiles, or in one case a well, laid for draining wet ground. Half-a-dozen other adits show a stratum equally rich in water.

(5) We shall see that we are expecting this area of water-bearing sand and gravel to supply no extraordinary amount, when we consider that with a single well, sunk on each acre in the 100, and each supplying its twenty persons, we would be satisfying the requirements of 2,000 persons. All will agree that one well to an acre is not excessive.

(6) Regarding the quality of this water, it is hardly necessary to speak. Itis from a clean surface soil, and passes through the only perfect filter, viz.: that supplied by nature.

(7) As already indicated, what is necessary is that the water be gathered to a pumping well or collecting reservoir.

I would advise that at some convenient point a basin be constructed by excavating into the hardpan, below the level of the water-bearing stratum, with its walls so arranged as that water may percolate into it. From this the water can be pumped by steam to a stand-pipe, situated on the highest point of the area, some 30 feet above the water-bearing stratum.

(8) Various methods may be utilized to aid in collecting water. The most easily adopted would be that of laying lines of tiles (either perforated or good field tiles with protected joints) on the hardpan, with a slight fall toward the pumping-well, thereby greatly increasing rapidity of collection.

If the collecting basin sunk in the hardpan proved to be capable of collecting a fair amount, it might be found sufficient to construct others as required, at convenient points, and pump from them to the main collecting basin by wind-mill power.

(9) It cannot be forgotten that from the sanitary standpoint, while underground waters have advantages above all others in point of natural purity, and hence are becomining daily more sought after, yet certain precautions are necessary in order that their wholesome character may be maintained. Should this source of supply be adopted, it will be proper for your committee to prevent contamination of the soil over-laying the water-bearing strata. This may readily be done under the powers now given to municipalities under the Public Health Act.

All of which is respectfuliy submitted.

PETER H. BRYCE,
Secretary.

On the recommendations contained in this report a further test of the water supply was made with the following result. The town is now voting on a by-law for establishing works for taking water from this source.

TORONTO, April 13th, 1891.

*To the Chairman of the Water and Light Committee of North Toronto:*

DEAR SIR,—I am pleased to learn that the test-well sunk on the Jakes Farm has proved in every respect so satisfactory. Water is being maintained at a level, in spite of the constant escape of water by the pipe in the valley below, of seven feet in an opening some ten feet deep.

Accordingly if the water came in at the rate of 5,000 gallons an hour, there would seem to be no good reason for hesitation in going on with the works at once.

The gravel bed is a perfect filter, and doubtless extends laterally in both directions some considerable distance, if its thickness be, as I am informed by you, some six feet deeper than the excavation already made.

1. I would advise the purchase of the block lying in the valley on both sides of the street to the south of the test-well.

2. The making of a reservoir at least as deep as our present test-well, but narrow north and south, and long east and west, so that the movement of the water towards the lower part of the valley can be intercepted by the excavation.

3. Piling down to the hardpan, this supporting double sheeting on the sides below the water line would do very well for a few years, if economy were an object.

4. I cannot advise wood above the water as in air and dampness it soon promotes fungoid growth. Hence some masonry will be necessary.

5. The reservoir should be roofed in, and six feet of hollow wall of brick carried up on the masonry would greatly promote freshness and coolness.

6. From this reservoir, pumping to the main leading to the standpipe could be carried on.

7. If a reservoir were thus carried across the valley and intercepted the water in the water bearing gravel, it would probably be found that half a dozen wind-mills situated along it and pumping to a common main would do all the water pumping required.

8. The economy of the methods proposed and the splendid water bearing gravel discovered, places the scheme so easily within the financial ability of the town, that I have no hesitation in recommending its adoption at once.

I am, yours truly,

PETER H. BRYCE.

This scheme, while likely to supply an abundance of water for a small town, must naturally be viewed as only the beginning of a more extended scheme for collecting underground waters as the population of the town becomes greater.

Should it in the future be found inadequate, the town may make use of a line of springs appearing to the east of the town from much deeper strata, and giving an abundant supply of pure water in quantities far beyond the probable needs of the town for many years or sink pipe wells to the water strata underlying the proposed location.

Apropos of this source of supply I insert an extract from the bulletin published by the Board on "Underground Waters as sources of Public Water Supplies in Ontario." The Bulletin has seemed to meet a demand for information on a subject which is being studied with new interest both here and in the United States; and the abstract is given to indicate the results of an examination into the possibility of utilizing such supplies for large cities:

"I may be pardoned for referring in this connection to the possibility of obtaining for Toronto a public supply from these underground sources. Here we are hampered again by a lack of data from speaking very positively, and yet there is a large amount of information regarding the topographical and surface physical conditions which may serve as a basis for discussion. We usually speak of Lake Ontario as being 247 feet above sea level while the strata rise towards the north till at King Station a height of over nine hundred feet is reached, thence descending till Lake Simcoe is reached at 717 feet above sea level. We all remember too that running south, some westerly and some easterly, are a number of valleys as those of the branches of the Don and various other creeks, some dipping towards the valley of the Humber, and others towards the Rouge. From what has been already said regarding the law governing the deposition of the post-glacial deposits, we may expect to find, what at most points is found, that over the rock strata of this region the Erie clays have been deposited with much regularity, over probably, as in the west, a thin layer of sand and gravel, and that over them but less regularly sands and gravels varying in their calcareous and argillaceous character—and therefore in their permeability—have been deposited. Were we to assume for a moment that no variations have taken place in the level of the underlying rock and its superimposed clays, sands and gravels, it would be an easy thing for us with a known rainfall, the degree of permeability of the strata, and their inclination or dip southward, to calculate with much precision the probabilities of obtaining a given amount of water at any point. Unfortunately for the calculation, however, deep erosions have taken place in these various deposits, and so have been formed river valleys dependent for their water supplies upon springs of the third class of Durand Claye.

"Another class of erosions exists in the shape of depressions creating small lake basins. From the survey of McAlpine and Tully we find that the whole of those forming the so-called Bond Lake system have an area of 462 acres and a watershed of 7,600. From calculations made on the basis of this area of 7,600 acres receiving 30 inches of rainfall, half of which soaks into the soil, it would hold a possible supply of water equal to 20,000,000 gallons for 135 successive days. Of course a certain loss by evaporation

must be allowed for. The existence of these lakes points to two interesting facts in this connection; first, to the existence of pervious upper beds, and second, to impervious deeper layers which form an impounding reservoir for the water flowing from the super-saturated zone, where the upper pervious meets with the underlying impervious layer of clay. Now the maintenance of a more or less constant supply, in spite of evaporation, of the water in these shallow basins throughout the summer points to the existence of an extended water-zone in the surrounding higher lands. Springs along the valley do the same. At Aurora such supply the village with ample public water, while at Newmarket, as already mentioned, have been developed what seems on first appearances for this locality a remarkable phenomenon, namely, artesian wells. It is futher interesting to note that for a considerable space at Holland Landing and to the eastward around the lake basin is a flat bottom land of fine sand. From this there is an abrupt ascent of clay, thence a depression till Newmarket is reached, some fifty feet above the level of the lake. Since I learned of the existence of artesian wells in Newmarket I have been much disturbed as to how to account for them. They are as far as I know the only ones between the two lakes.* Recalling, however, the existence of the sand flat surrounding Lake Simcoe at Holland Landing some fifteen feet above the lake, and finding from the levels that Newmarket is only fifty feet higher than Lake Simcoe at the railway station, I venture the following explanation as accounting in part at any rate for their existence.

"The fact of the existence of this sand layer and of the artesian wells makes us curious to learn, whether assuming it to be thus continuous, it appears to the south of Oak Ridges. As Bond and other lakes lie about on the height of land, only 26 feet lower than Oak Ridges and 200 feet above Lake Simcoe, it does not seem at all probable that the permeable beds which supply these lakes have anything in common with the aforesaid sand layer. The same level as Lake Simcoe 717 feet to the south of the water-shed, arrived at along Yonge street, is seven miles south of Bond Lake; and did these underlying strata maintain the same level it would be near Thornhill that we would expect to find the layer of sand. If in this latter locality there should be found a widely distributed layer of water-bearing sand superimposed upon a bed of clay, and having a head of water extending back as far as the Oak Ridges, there seems no good reason why it should not supply ample water for the purposes of a large city. Remembering that McAlpine and Tully's scheme contemplated using the Bond lakes, Rouge, etc., and recollecting that their summer supply, constantly being reduced by evaporation, is wholly dependent upon these underground sources, apart from an occasional rain, there surely can be no reason why we should not find these same waters in greater quantities in the water bearing sands and gravels from which they flow, and unpolluted by any surface wash or contamination or by the free vegetable growth which makes these lakes as they now exist such undesirable sources of supply. It will be seen how interesting this local supply becomes when we recognise that in the small area of a few miles we have illustrated, the various sources of public water supplies. First, we have the various creeks of the watershed, which uniting create on the east the branches of the Rouge and on the west the branches of the Humber, thus yielding a river supply undesirable because of uncertainty through evaporation during the summer and the certainty of surface pollution. Second, Bond lake and her sister lakes forming reservoirs of water, made to some extent impure with surface drainage, but further enormously contaminated by deposits of organic matter which have been washed into them during the past and from the abundant vegetable growth always present in such shallow basins. Third, water from springs flowing from the hill side and supplying the village of Aurora with a public water of a perfect character as regards freedom from organic pollution. Fourth, at Newmarket, artesian water flowing clear and cold from a sand stratum over one hundred feet beneath the surface. Now, in order to gather that portion of the waters from the first two classes produced from these underground supplies in the same state of purity as those in the last two classes, it is apparent that all that is necessary will be for a perforated tile

* *Since writing this the existence of several other artesian wells on both sides of the Oak Ridges has come to my knowledge.

of sufficient capacity to be laid at a gentle incline in galleries dug down to the hard-pan of clay along which the waters flow on the south side of the height of land and collecting them before they appear as springs at the surface, flowing thence into the lakes or creeks at a time when they are in a state of absolute purity, due to their long underground filtration, and before they are uncontaminated by any surface wash. Examples of how this can be done may be seen well illustrated both in London and Brantford, where ample supplies of first-class water have been obtained ; but if we wish for higher authorities, because they are farther away, we may cite Toulouse, Florence, Lyons, etc., as examples of the method."

OFFICE OF THE PROVINCIAL BOARD OF HEALTH,
172 Yonge Street,
TORONTO, March 6th, 1891.

*To the Editor of the* Globe.

DEAR SIR,—I have observed in to-day's issue of the *Globe* an editorial on the "Civic Outlook," a reference to my views regarding the possibility of supplying Toronto by Artesian Wells. As I imagine the reference is to words of mine contained in Bulletin 1, 1891 of this board, on underground waters as sources of public supplies in Ontario, I would refer you to the following quotation from the bulletin for my exact words on the Toronto problem. (*Quotation from Bulletin as given above.*)

From the quotation it will be seen that it is improper to say that I have suggested the probability of obtaining a public supply of water for Toronto from artesian wells ; although the inference is proper enough that the underground waters which have appeared at Newmarket in artesian wells indicate, together with other facts, the existence in the highlands between lake Ontario and lake Simcoe of large underground supplies which, collected from springs, artesian wells and by underground galleries or tunnels, are capable of yielding a large proportion of the amount of water needed for Toronto.

These facts, with much other evidence, enable me further to say that I am persuaded it will be found, should a line be surveyed by the most direct route between Toronto and Lake Simcoe and the construction of an iron-pipe or other conduit, equally good from the hygienic standpoint, be proceeded with, that these underground waters will be yielding a very notable addition to the city's present supply long before a tunnel has penetrated half-way through the highlands to lake Simcoe. One thing we are assured of is that from the hygienic standpoint the purity of these underground waters is likely to be beyond question.

I have the honor to be,
Yours very truly,

P. H. BRYCE,
Secretary.

The "Progress Report on Irrigation in the United States," just published by the Department of Agriculture, has collected a large mass of most interesting information on underground water supplies. It points out that in the whole territory to the east of the Rocky Mountains in New Mexico, Nebraska, Colorado, etc., owing to the periodic rise of wells, and of rivers such as the Sabine and Red River of the South, not accounted for by any seasonal increase of precipitation, that the whole region is underlaid by what is in effect a moving body of water. How much value such are if brought to the surface for irrigation purposes is gathered from the fact that a spring yielding only two quarts of water per second will probably serve an acre of land, if properly applied. This would be 43,200 gallons per day giving a quart for every square foot. A reservoir to store such a body of water should contain 5,760 cubic feet ; that is, an area 40 by 20 feet, having a depth of seven feet. As a still better illustration of the amount of water to be gathered in certain districts from the "Undersheet water of the Valleys," this report states that "The managers of the Great Eastern Irrigation Ditch, at Garden City, Kansas, have successfully brought to a head, the first portion of their experimenting with the underground supply." The ditch was originally constructed to be supplied by the Arkansas river direct ; but the great use of water above in Colorado, and the aridity of several seasons rendered the ditch practically dry. "The main ditch was continued westwardly parallel with the bank of the river ; at a point one mile west of the Hartland on the Arkansas, the company began to deepen the ditch, so that while the bottom has a fall sufficient to secure the ready flow of the water, its depth below the surface of the ground is made to increase as it extends westward. In the progress

of one mile the depth has been so increased that it is now ten feet below the surface. Into the ditch thus formed, so as to tap the saturated sand at 10 feet below, a body of water is flowing, 14 feet wide and 11 inches deep. Some distance below the stream is 20 feet wide with an average depth of 6 inches. The water plane, which is found in firm, close sand fully saturated, begins to flow or discharge water into the channel at the point of excavation. The head of the ditch has the appearance of a large spring, the supply of which is oozing at every point."

"The irrigation engineers in Colorado are interesting themselves quite actively in the obtaining of supplies by the sinking of galleries below the surface of streams in a manner similar to that begun in the Arkansas Valley within the State of Kansas. They also have just begun to apprehend the importance of the phreatic supply which it has been demonstrated can be found in the gravel beds, so that the water found in them can percolate into underground tanks and wells and be lifted by machines to the surface, a method of supply which will be shown to take on a great impetus. The use of pumps of great power in lifting underground currents to the surface from bedrock is also proposed, and works of that character in several instances are projected and begun."

Numerous other illustrations might be quoted to show what has already been set forth in the bulletin published by this Board. These phreatic supplies have therein been shown to have an especial interest for us from the sanitary standpoint. In this province the difficulties are fewer than in most other places, since its geology so far as older Ontario is concerned is of a comparatively simple character. It is to be hoped that agriculturists, as well as boards of health and town councils, will lend their energies to the development of this source of material wealth and sanitary improvement.

## VII. OUTBREAKS OF CONTAGIOUS DISEASES.

The year 1890, remarkable as being in many respects free from extended outbreaks of smallpox and other contagious diseases, recognised under the Public Health Act, was even more memorable as being that which brought to the notice of the larger portion of the present generation, an illustration of those infections, or pestilences which history has handed down as sweeping from time to time in short periods over the whole world.

1. *Influenza.* Existing records go back to an epidemic of influenza in December, 1173, in Germany and England, and tell of some ninety outbreaks from that time down to the winter of 1874-75, which has been succeeded by that of 1889-90.

The records further show a tendency to the grouping of outbreaks in a series of successive years, as 1830-31 32-33, 1841-42-43 and 1860-61-62-63.

The disease has always borne the character of a typical epidemic, and frequently, as in the recent outbreak, has been truly pandemic.

As regards its mode of progression, Hirsch after a careful study states that, "The larger number of facts is rather in favor of a radical progress of influenza, or a progress by leaps and bounds, than of a line of progress; while, in a comprehensive review of the facts, the direction is found to be sometimes to one point of the compass, sometimes to another. Regarding its seasonal prevalence, of 125 outbreaks, 50 began in the winter, 35 in the spring, 16 in the summer and 24 in the autumn. Hirsch further remarks that it has also occurred under the most various conditions of the weather—high and low temperature, steady and changeable weather, much or little atmospheric moisture."

Regarding the outbreak of 1889-90, so far as this continent is concerned, the outbreak appeared as will be seen in the following study under unusual climatic conditions. The re-appearance of the disease both in America and Great Britain has been partial and seemed as in Chicago, to have local favoring causes. It is to be hoped that the enquiry of the Local Government Board of Great Britain replied to in the following letter will throw some light upon the genesis of the disease.

The peculiar nature of "La Grippe" in affecting the nerve centres, producing effects only slowly recovered from as from other nervous diseases affecting nutrition, have directed special attention to its tendency to induce other wasting diseases, but notably consumption.

OFFICE OF PROVINCIAL BOARD OF HEALTH,
ONTARIO, TORONTO, March 16th, 1891

*To the President and Members of the Local Government Board of Great Britain :—*

GENTLEMEN,—In compliance with the request contained in your circular of April 2nd, 1890, I have the honor to submit in addition to the brief answers forwarded to the questions of the circular, the following considerations:

1. It will be noticed from the subjoined meteorological report supplied by the Toronto Observatory, that the period, which was marked in Ontario by the epidemic prevalence of La Grippe, shows a number of meteorological conditions of an unusual and extreme character.

The weekly and monthly variations were as notable as the seasonal divergence from the average of 50 years ; and of these variations that of a temperature higher than the average is most conspicuous. This high temperature was greatest in December, being 8.16° F. above the average.

2. Naturally dependent upon this is the excessive prevalence of S.W. and W. winds, and a rainfall of 2.96 inches more than the average for the month, with more than twice the average number of days for the month on which rain or snow fell.

3. These variations from the normal were greatest during the two weeks from 15th to the 21st and from the 22nd to the 28th of December. That between the 15th and 21st showed a relative humidity of 8 per cent. above the average, a mean temperature 11.86° higher than the average, with f ur days on which rain fell ; while that between the 22nd and 28th had as high a mean temperature, with a maximum range of temperature in 24 hours of 38° in consequence of a sudden fall. This extreme daily range with the existing excessive humidity necessarily produced chilling effects upon the systems of those exposed to it, but especially upon the less robust of the community. The returns obtained from physicians show that it was during this period in Toronto that the disease appeared to take on an epidemic form.

4. Meteorological conditions, varying notably from those to which Canadians are accustomed, occurred throughout January and February. The depressing influences of the excessive amount of cloud and rainfall with sudden extreme daily decreases of temperature continued : so that the *materies morbi* had the amplest opportunity of exercising to the fullest extent its malign influences.

Without offering any opinion with regard to the existence of a specific microbe of "La Grippe," it may fairly be said that the complete failure of investigators to discover any form *sui generis* with the undoubted fact of "La Grippe" being infectious, allows us to assume that some microbe (*e.g.*, the steptococ us lanceolatus of Gamaleia) obtained, under the aforesaid atmospheric conditions, exceptionally favorable opportunities for effecting an entrance into the systems of persons at a time when—

(*a*) The resistance of the physical system to disease was lessened, and when the mucous membrane of the respiratory tract congested by the chill damp atmosphere, presented a fertile soil for the inhaled germs of the disease.

(*b*) When through the absence of sunlight, house-atmospheres became more than ordinarily loaded with fungoid and bacterial impurities.

(*c*) When through the excessively wet weather the majority of the people were kept housed and exposed to sewer or other emanations in an unusual degree, and to an extent incompatible with health.

(*d*) When exposure to the exhalations of persons already attacked, in the infected air of houses, factories, schools, churches, etc., notably increased the opportunities for the spread of the disease.

5. The disease in the matter of causation would seem to have its affinities in outbreaks of pythogenic pneumonia and in sore-throat and diphtheria which seem to become peculiar to the atmosphere of certain public institutions, as hospitals, orphanages, etc., affecting generally all new comers.

6. The disease presented most diverse phenomena, and almost every character marking it in other countries was illustrated in the epidemic in Ontario.

Superadded to the influenza with its febrile and catarrhal manifestations were pneumonic complications of every variety; neuralgias, general and localized, dominated all classes in adults; while great nervous depression during the acute stage of the disease with extreme subsequent neurasthenia in very many instances were among its most marked characteristics. Gastro-enteric troubles occurred to a notable extent, and in some instances a temporary but marked jaundice was present.

During the months which have followed the epidemic numerous instances have occurred where neurasthenias and pneumonic complications ending in phthisis, have had fatal terminations.

I have the honor to be,
Your obedient servant,

PETER H. BRYCE,
Secretary.

---

NAME OF COLONY, CANADA, PROVINCE OF ONTARIO.

*Questions of Local Government Board:*

| | |
|---|---|
| Has any epidemic "Influenza," particularly if characterized by much nervous depression, severe frontal headache, or various muscular pains, shown itself in your Colony? | Yes. |
| The date of the *first* occurrence (as far as you know) of such an Influenza. | December 4th, 1889. |
| The date of commencement and decline of the epidemic prevalence of such Influenza. | Probably the most nearly correct date for its epidemic appearance is December 20th, 1889. Its decline as an epidemic would be about the end of February, 1890. |
| Any evidence as to the mode of origin or introduction of the disease or any opinion on the subject held by the medical adviser of the Government and as to its method of spread. | It was in the exact sense of the term a pandemic, and was undoubtedly infectious. Its zymotic character is assumed, and would seem to stand in the yet undetermined category in which pneumonia is placed by most physicians. |
| Has any unusual complaint been observed among domestic animals, and if so, in what animals, and with what symptoms? | From various observers it would seem that nothing appeared among animals contemporaneous with La Grippe in man. |
| Any observations recorded in the Colony as to the behaviour of the Influenza epidemic, especially as to its dissemination among particular communities and its incidence on particular localities. | The disease was pandemic in Ontario, and prevailed very generally in Manitoba and the North-West Territories during a winter severe even for that climate; the mercury being for days together at from 15°-30° below 0° F. |

---

METEOROLOGICAL RETURNS SUPPLIED BY TORONTO OBSERVATORY FOR THE PERIOD FROM DECEMBER 1ST, 1889, TO FEBRUARY 28TH, 1890.

| WINTER 1889 AND 1890. | Relative humidity. | Amount of cloud. | Mean temperature. | Range of temperature in week. | Mean daily range. | Greatest range in 24 hours. | Amount of rain and No. of days. | Amount of snow and No. of days. | No. hours of bright sunshine. |
|---|---|---|---|---|---|---|---|---|---|
| | per cent. | 0-10 | degrees. | degrees. | degrees. | degrees. | inches & days. | inches & days. | hours. |
| December 1 to 7..... | 81 | 7 | 29.2 | 38.9 | 17.1 | { -32.7 / +32.6 } | 0.41..3 | 2.7..3 | ..... |
| " 8 " 14..... | 84 | 7 | 35.5 | 36.8 | 14.4 | ..... | 0.94..3 | 1.2..2 | ..... |
| " 15 " 21..... | 88 | 9 | 37.0 | 18.0 | 8.8 | ..... | 0.84..4 | S....1 | ..... |
| " 22 " 28..... | 77 | 7 | 37.0 | 25.4 | 10.4 | -38.0 | 2.06..3 | S....2 | ..... |
| " 29 " Jan. 4.. | 77 | 7 | 33.5 | 38.7 | 16.1 | { +28.7 / -29.0 } | 1.02..3 | S....1 | ..... |
| January 5 to 11.... ... | 83 | 9 | 27.7 | 47.5 | 17.0 | { +34.8 / -32.6 } | 1.02..3 | 3.5..5 | ..... |
| " 12 " 18..... | 84 | 7 | 28.3 | 38.0 | 15.3 | -20.6 | 0.34..4 | 0.6..3 | ..... |
| " 19 " 25..... | 81 | 8 | 27.0 | 32.3 | 12.1 | ... ..... | 0.25. 2 | 2.2..4 | ..... |
| " 26 " Feb. 1.... | 85 | 8 | 31.6 | 37.0 | 13.3 | ..... | 0.36..3 | S....2 | ..... |
| February 2 to 8..... | 84 | 8 | 30.3 | 40.7 | 17.7 | -36.0 | 0.16..3 | 3.5..4 | ..... |
| " 9 " 15..... | 83 | 7 | 26.5 | 30.0 | 15.1 | { +20.8 / -23.4 } | 0.27..1 | 5.0..4 | ..... |
| " 16 " 22..... | 84 | 8 | 21.1 | 33.0 | 19.0 | { +25.4 / -27.2 } | 0.18..2 | 5.6..6 | ..... . |
| " 23 " Mar. 1.. | 89 | 9 | 32.2 | 27.9 | 11.9 | +25.7 | 1.32..5 | 1.4..4 | ..... |
| RANGE OF MONTH. | | | | | | | | | |
| December, 1889..... | 82 | 7 | 34.30 | 52.9 | 12.7 | .... ... | 4.51..14 | 3.9...9 | 77.0 |
| Difference from average. | 0 | -1 | +8.16 | ..... | .... ... | ..... | +2 96.x8 | -10.6..-5 | +26.4 |
| January, 1890..... | 83 | 8 | 29.69 | 47.5 | 14.6 | ..... | 2.73..14 | 6.3..14 | 59.9 |
| Difference from average. | 0 | +1 | +7.36 | ..... | ..... | ..... | +1.57.x9 | -11.2...0 | -16.7 |
| February, 1890..... | 85 | 8 | 27.80 | 50.8 | 16.0 | ..... | 1.93..11 | 15.5..17 | 52.8 |
| Difference from average. | +4 | +1 | +5.37 | ..... | ..... | ..... | +1.05.x6 | -1.7..+4 | -39.2 |

Column 6 gives the extreme changes in each week of the winter in temperature of consecutive days (24 hours) + means increasing temperature standing for plus ; and - means a decreasing temperature.

Amount of cloud in column 2 ranges between 0 and 10 as maximum.

Prevailing winds at Toronto were:—

| — | N. | N. E. | E. | S. E. | S. | S. W. | N. | N. W. | W. |
|---|---|---|---|---|---|---|---|---|---|
| December, 1889..... .. | 47 | 92 | 116 | 35 | 24 | 202 | 187 | 37 | 10 |
| January, 1890..... | 57 | 78 | 83 | 61 | 36 | 171 | 157 | 94 | 7 |
| February, 1890..... | 102 | 125 | 103 | 29 | 26 | 127 | 69 | 87 | 4 |

Assuming the winter quarter to be represented by the three months ending 28th of February, it is the warmest winter recorded, the average temperature being 30.6°. or 7° above the normal, and up to the end of the quarter the temperature had not fallen to zero. In January the amount of sky clouded was 7 per cent. above the average, and there were 14 days when no sun was visible. In general, December was remarkable for the number of storms and the rapidity of their movement, their average rate much exceeding any other month before recorded. January was remarkable for the persistence of abnormally high temperature in the lower portion of Ontario and heavy gales in the lake districts.

The rainfall in each district in Ontario was above the average and the snow, except in the month of February, in the N. and N. W. part of the Province, was below the average.

Difference from the average fall.

RAIN.

| — | W. S. W. | N. N. W. | Centre. | E. N. E. |
|---|---|---|---|---|
| | inches. | inches. | inches. | inches. |
| December ..... | +2.52 | +1.55 | +2.97 | +1.67 |
| January .... ..... | +1.88 | +1.21 | +1.63 | +1.39 |
| February..... | +0.76 | +0.31 | +1.23 | +1.17 |
| Total..... .. | +5.16 | +3.07 | +5.83 | +4.23 |

Difference from the average fall.

SNOW.

| — | W. S. W. | N. N. W. | Centre. | E. N. E. |
|---|---|---|---|---|
| | inches. | inches. | inches. | inches. |
| December..... | -14.9 | -11.7 | -12.6 | -9.3 |
| January..... | -12.0 | -0.1 | -6.5 | -6.8 |
| February..... ..... | -4.3 | -6.2 | -2.8 | -0.4 |
| Total..... | -31.2 | -5.6 | -21.9 | -16.5 |

2. *Tuberculosis.*—The past year has been further especially marked as regards consumption by the world-wide attention which has been given to it by Koch's published statements

of a vaccine against tuberculosis having been discovered by him. While later experience has not confirmed the value of the discovery, yet the universal attention which has been directed to tuberculosis as being a contagious disease, will have compensating results in directing the public more than ever before to the influences tending to prevent the disease and to the measures likely to limit its spread.

To this end your Board directed its Committee on Epidemics to prepare a bulletin, from which the following are the conclusions drawn.

"Setting forth, therefore in brief form the conclusions based on this statistical study, I would say :—

1. That we must recognize the disease phthisis, as beyond question a contagious disease belonging to the category wherein are placed glanders and leprosy.

2. That assuming this to be true beyond question, the attitude we must as officers of health assume, is to treat it as such, and hence must examine into what practical measures are to be taken by us for preventing it, and so far as possible, limit its dissemination from those centres where we find it existing.

3. Arguing by inferences fairly drawn from the numerous statistics already presented I conclude that we must primarily regard the question of dealing practically with the problem, as being one having in an especial sense the qualities of a sanitary crusade.

4. This I infer means that the extinction of phthisis must be looked for by our urging that to deal with it successfully, means as with diphtheria and other diseases of its class, we must endeavor :—

(*a*) To prevent it by removing the causes which promote it.

(*b*) By so regulating the habits and lives of those affected with it, as to prevent them from becoming sources of infection to the healthy.

(*c*) By the establishment of hospitals and sanitaria, where those infected may have the best possible opportunities of being cured of the disease.

5. Referring to these points in their order, I would say as regards the prevention of the disease, we must look to the private, or family, home of the people.

A. Here the matters specially to be enquired into are :—

1. The removal of dampness, both under and around houses, as also the removal of all wood and other organic matter tending to decay or promote fungoid growth.

2. The establishment of efficient and complete plumbing and drainage.

3. The introduction of a pure water supply.

4. The maintenance of the purity of the atmosphere of the house, by cleanliness, ventilation and abundance of sunlight.

5. Proper and equable heating of the living room.

6. Attention to the clothing of people, whether in the house or out of it. It must be clean, non-conducting, and sufficient.

7. The use of nutritious and wholesome food, notably of animal foods, as meat, milk, etc.

The 4th point means that we must follow the people to :—

(1) The school, and see that those desiderata required for the healthy home, be had in the school.

(2) In the work-room and shop, where there is the constant difficulty of overcrowding and uncleanliness.

(3) In the trade or occupation, notably in our woollen factories, where animal materials are handled ; to the works where stone-cutting, grinding, etc., are carried on ; and to those where effluvia and poisonous particles are given off, as in painting, card glazing, arsenical manufacturing, etc.

In this direction indeed, our labors must simply be never-ceasing, for the dangers to health are almost as multifarious as the different industries carried on.

B. Thus we have to deal with the large problem of municipal sanitation. This means (*a*) town drainage; (*b*) town sewerage; (*c*) town paving; (*d*) public waterworks; (*e*) inspection of filth nuisances; (*f*) compulsory notification of cases of consumption.

This (*f*) means the removal of consumptives from daily contact with others in public institutions, in workshops, etc.; (*g*) sanitary and medical education of the people in the homes of such, as to the dangers of personal contact.

The numerous details on this point must naturally be effective to the degree that public sanitation acquires an influence over the person and the home, and to the degree that the medical profession in their private practice insist on the danger of infection, and on the carrying out in homes of measures to limit this.

C. The last point is one which especially belongs to our work, viz., the management of municipal hospitals for consumptives, and of sanitaria.

In centuries past lazarettos were numerous in Europe. the confinement of lepers was compulsory, and as a result, leprosy can scarcely be said to belong to the category of diseases amongst civilized people. There can be no logical reason why municipal and state government aid should not be given to hospitals specially appointed for treating consumption I do not think that it is either practical or advisable that we should teach or urge that segregation of consumptives in such should be made compulsory; but there are abundant reasons why the existence of such homes where the poorer classes can live, and be treated should everywhere be made available.

The question of how far these views can be carried into practice will depend directly upon the appreciation which the public has of the dangers to be apprehended and of the means to be taken to avoid such.

It is within the scope, but not within the limits of this report, to discuss on what basis such can be carried out; but it must suffice to say that curative institutions for consumption must be essentially sanitaria, where equable climate, dry air, pure air, sunlight, outdoor work and exercise, gymnastics, and indeed every measure going to increase the resisting power of the system, may be had to the greatest extent which any climate makes possible. It is to be hoped that the present year will see some definite steps being taken for the establishment of hospitals specially directed to the end of treating patients suffering from this disease.

A discussion on this subject presented by myself at the International Conference of State Boards held in Washington took place, and a committee thereof formulated its conclusions as a report of progress, which was as follows:—

*To the Chairman and Members of the International Conference of State Boards of Health:—*

Gentlemen,—Your committee begs leave to report the following resolutions as a report of progress;—

1. That it is the opinion of this conference that tuberculosis is a zymotic disease; that its germs are developed within the tissues of man and of various animals, and that these germs are capable of an existence external to the body for a number of months, especially in dried sputum, and in places where least exposed to the free action of the atmosphere and sunlight.

2. That the germs of tuberculosis are conveyed in various ways to persons and animals, the principal media of these being:—

(*a*) Dust containing dried sputum.

(*b*) Food, either contaminated with infected particles, or as the flesh of tuberculous animals.

(*c*) Milk from phthisical mothers and tuberculous cows.

3. That unsanitary conditions are the prime factors tending to the development and dissemination of the disease, such as :—

(*a*) House and soil dampness.

(*b*) Lack of sunlight, and bad ventilation.

(*c*) Bad plumbing and house drainage.

(*d*) Overcrowding in living rooms, in schools, in workshops, and public institutions.

4. That the disease is undoubtedly disseminated through the neglect to destroy or disinfect the sputa of the phthisical, distributed as this infectious matter is :—

(*a*) On infected linen, dangerous to washerwomen, clothing, carpets, etc.

(*b*) On the floors and walls of houses, workshops, hospitals and hotels, especially of health resorts.

5. That to limit the spread of tuberculosis, it is necessary that notification by physicians and householders of its existence be made compulsory, thereby enabling health authorities to examine into the sanitary surroundings of those affected, and to make provision for the adoption of the necessary precautions against infection of the healthy.

6. That municipal inspection of dressed meats and of dairy cattle be systematically carried out, and that the notification of the health authorities by owners of infected animals be made compulsory.

7. That municipal and state governments ought to aid in the work of limiting the disease by the establishment of institutions especially designed for the reception and treatment of the phthisical, and so situated that while minimizing the danger to the general community, they may likewise supply means for outdoor work and exercise, suited to the condition of different patients.

Peter H. Bryce, Chairman.
Lucien F. Salomon.
V. C. Vaughan.

3. *Diphtheria.* It is notable that with regard to diphtheria, 1890 should have also produced work, which much more than any other published, has aided in the elucidation of the contradictory views which have so long been held with regard to the nature and real cause of this disease. The experiments, both biological and chemical, which have been carried on by Drs. Roux and Yersin, during 1889 and 1890, at the Pasteur Institute, are of so interesting and important a character in their practical bearing, that I shall here introduce some extracts from their report :

" Diphtheria is characterised by the bacilli described by Messrs. Klebs and Loeffler ; in order to make a precise diagnosis of this malady it is necessary to make a careful examination of the bacilli. It is easy to reach this result by a microscopic examination, and by the sowing of the serum, according to the methods of procedure indicated by M. Loeffler.

We have employed them in more than a hundred cases of diphtheria, and we think that they alone afford a scientific diagnosis.

*Diagnosis of Diphtheria.*—When we are in the presence of quinsy with false membrane it is necessary to take away a fragment of it with cotton batting, tied at the end of a pair of pincers or fixed to an unyielding stick. The pieces of the membrane wetted on blotting paper are rubbed on cover-glasses so that the coating coming from the false membrane remains on the surface of the glass which is not formed by mucus bacilli. The cover-glasses, dried and passed through the flame, are colored, some by the blue of

Loeffler and others with gentian violet, according to Gram's method. The preparation, washed with water, is examined when damp with a view to homogeneous immersion. In the midst of other microbes the diphtheritic bacilli, often grouped together, appear in the form of sticks with round tapering ends, slightly bent and swollen like a pear, or in uneven granulated masses. According to Gram's method they are deeply colored. They never fail to be so in diphtheria cases, and with a little experience they may be easily distinguished from all other bacilli. In some serious cases we have found them in a state of almost pure culture; ordinarily they are mixed with a great many other microbes, but, in going over the preparations, small bundles of characteristic bacilli are met with. Generally the pseudo-membranes of the mouth contain a greater number of germs than those of the trachea. The false, fetid diphtheritic membranes contain at the same time the specific bacilli, and also a great many microscopic organisms. In the midst of the enormous mass of microbes which these adulterated membranes leave on the surface of the cover-glasses it is sometimes difficult to distinguish the diphtheria microbe. The difficulty may be overcome, however, by hardening them in alcohol and by making incisions which are colored by Gram's method and by eosine. On arriving at the superficial coating, which is rich with various microbes, we may find enclosed in the fibrine small groups of very distinct specific bacilli.

This examination is quickly made, it requiring only a few minutes, and in the large majority of cases it gives quite precise information. It might be practiced on the false dried membranes, and we have been able several times to recognise diphtheria on membranes which were rapidly dried on a cloth or on blotting paper, and which were sent to us by confreres at a distance.

A physician treating diphtheria patients will gather useful information from a systematic examination of false membranes made every day with a microscope. When the malady approaches its termination, specific bacilli become less numerous, while the microbes of impurity increase in the pseudo-membranes, which are fewer and less elastic and more friable. Sometimes, and even at the beginning of diphtheria we can foretell a favorable issue if it can be proven that there are very few specific bacilli and many other microbes present, notably cocci. These prognostications, based on microscopic examination, have been verified more than once in the experience of Dr. Jules Simon, of the hospital for sick children.

If we desire to make a diagnosis of diphtheria in an absolutely certain manner, we must isolate the specific bacillius and bring it to a state of pure culture. This problem, which at first appears difficult, may be solved very readily by the sowing of the false membrane of the coagulated serum, according to the method of M. Loeffler. Concerning this subject, we can but repeat what was said in our memoir of 1888: The serum is so favorable to the increase of diphtheritic bacilli that it forms there visible colonies in less than 24 hours, whereas for the most part the microbes of impurity have hardly commenced to vegetate. It is then necessary to slightly scrape the fragment of false membrane which has already been used at the microscopic examination with a platinum spatula, and to pass it over the surface of a tube of serum; in this manner, without recharging the spatula, two or three tubes can be sown in succession. The tubes of serum are then placed in an oven at 35° C., and generally the diphtheritic colonies become visible after 20 hours. These are round specks of a greyish-white of which the centre is more opaque than the periphery. They remain small upon the first tubes sown because they are quite close together, while they spread and become larger in the tubes treated last, and take after 48 hours an aspect quite characteristic. When we sow for comparison tubes of serum with false diphtheritic membrane with the material which is obtainable from the mucus in cases of quinsy non-specific, the aspect of the tubes is quite different after treatment of 20 hours in the oven. Upon those sown with the true diphtheria we observe a great number of colonies almost alike, whereas on the others the culture is often hardly discernible. It is rare in cases of diphtheria that the development of organisms of impurity prevents the recognition of specific bacilli. We are unable to state that the colonies are constant in their aspect; it is necessary to make preparations on cover-glasses and to examine them with the microscope after having been colored. Sometimes there are colonies on the tubes of serum very much resembling those of diphtheria, and

which are formed by a coccus. This coccus grows very well upon the serum. After 20 hours its colonies have the size of those of diphtheria, but after remaining in the oven for 36 and 48 hours, they are less voluminous than the diphtheritic colonies of the same age. Further, they take when getting old a yellow tint which renders all confusion impossible. We have come into contact with colonies of another coccus which resembled those of diphtheria; they remained greyish on becoming old but their growth was less than that of the specific microbe.

The culture on serum succeeds very well with the false dried membranes; it is necessary to soften them in a little pure water and to operate afterwards as though they were fresh membranes. The dried bacilli would in fact remain alive for a long time, and in that state they can stand a temperature of 95°–98° C. for an hour. When we have to deal with false membranes very full of strange microbes which render difficult the isolation of the specific bacilli, we sometimes obtain better results by drying them than by warming them before exposing them in the oven of Gay Lussac for half an hour. A great many of the common microbes are killed, but the diphtheritic bacilli resist.

As soon as it is made known by microscopic examination that a colony of specific bacilli has formed, it is necessary to prepare pure cultures in order to try their effect upon animals. As the colonies obtained from the direct sowing of the false membranes contain almost always a few strange germs, it is necessary to purify them. We easily succeed in doing this by removing one of them with platinum or glass wire. A little of the matter is diluted in a decentigrame of pure broth contained in a test tube, which is then quickly shaken so as mix the bacilli with the liquid and take on a flattened platinum wire a little of the solution in order to spread it on the surface of the serum. After twenty-four hours of exposure in the oven the colonies are very visible; they can be used for inoculations and sowing. Thanks to the employment of serum, it is easy in forty-eight hours to prepare pure cultures of diphtheritic bacilli by taking them from false membranes, and thus removing all doubts about the nature of the malady. Nutritive gélose does not present the same advantages as serum. The specific bacilli grow very well from this centre, but most of the accompanying microbes grow as rapidly, and soon invade the surface. M. Klein has insisted lately that we should use gelatine for the isolation of the specific bacilli. The slowness with which this microbe develops from this centre must assuredly be an objection to this practice.

In order to recognize diphtheria, sowing on serum is superior to a microscopic examination. In several cases where we could hardly find the bacilli with the microscope, sowing gave in twenty-four hours a great number of colonies.

In order to give an account of the practical value of these proceedings, we desired that they should be adopted by hospitals, and we bound ourselves during a certain number of days to examine a number of children admitted to the pavilion of diphtheria at the hospital for sick children. We took the patients indiscriminately, without regard to the clinical symptoms which they presented, confining ourselves to the microscopical and bacteriological proceedings for making the diagnoses. Frequently, even, they would give us the false membranes taken from children whom we had never been seen. It was only after having proven the presence or absence of the bacilli, that we proceeded to a fuller examination of the details of the malady, and then we took into account any observations made during the proceedings. Every day at two o'clock we made a microscopic examination, and sowed the products furnished us by fresh patients, and more often than not we could give a precise diagnosis by noon on the following day. Dr. Jules Simon, who has been so kind as to take an interest in our researches, and has given us every facility for carrying on the work, is able to prove how much diphtheria diagnosis has gained in precision by the employment of these scientific methods, and has so stated in a recent clinique. Our friends, Messrs. Chantemesse and Widal, have also assured themselves by personal experience of the value of this method of diagnosing, and they have affirmed its practical importance.

From the 11th April to the 26th May, we examined 80 children sent to the pavilion of diphtheria. In sixty-one of them we found the specific bacilli; thirty of them died and thirty-one have been cured after passing through more or less serious illnesses. The fatal cases comprised 16 quinsies, 8 quinsies with croup and 6 croups without quinsy.

Those who have been cured may be divided into 21 quinsies, 7 quinsies with croup and 3 croups without quinsy. In nine cases false membranes were given us, and the microscopic examination enabled us to immediately verify the diagnosis by the culture of the following day. Several of the cases of croup without quinsy were at an early stage of development, and in order to make the sowing we would slightly scrape with a spatula the mucus off the amygdales and off the pharynx. In spite of the absence of false membranes in the throat, the tubes of serum showed specific colonies and the diagnosis of diphtheritic croup was thus proven.

The nineteen children who had not specific bacilli in the mouth, were they diphtheritic? We have not hesitated to say no, and the course of the disease has confirmed our opinion. Every one of them has been cured, and their general state was very different from those who carried the bacilli. Some of them had very little non-adherent false membrane, and that could not be reproduced, so that clinically we could only consider them very doubtfully diphtheritic. The others, on the contrary, had on the amygdales and on the palate false adherent membranes, which reformed very rapidly in spite of antiseptical swabbing, and the diagnosis of diphtheritical quinsy did not appear to those who had had experience and practice to be at all doubtful. As repeated sowings did not reveal to us any specific colonies, we declared that those children had not diphtheria.

Observations show, moreover, that several microscopic organisms partake, along with the bacillus of diphtheria, the property of forming false membranes on mucous surfaces. We had already known that the pyogenic streptococcus also gives fibrinous exudats similar to those of diphtheria. Chantemesse and Widal have given examples of them, and Wurtz and Burges have caused to be shown that in scarlatinal anginas, non diphtheritic, the streptococcus was abundant.

Physicians practised in infant maladies can then regard as diphtheritics and send to a special pavilion children which have not got this malady. There is no need of insisting on the danger to these children in placing them, with this sore throat in a diphtheria ward.

In paying attention only to the classic signs, similar mistakes cannot be avoided; we will continue not to recognise true diphtherias and to take for such cases anginas which are not diphtheritic. The introduction to the practical means which we have indicated would diminish greatly the number of errors.

Also would we wish to see installed in each hospital for children a special service for the examination for entrance. This service would form a sort of vestibule to the diphtheria ward; it would be provided with a microscope, coloring reagents and a thermostat. As soon as a child who has false membranes is brought in, a member of the staff, accustomed to these examinations removes a fragment of the pseudo-membrane in order to examine it under the microscope and to sow it. In the great majority of diphtheria cases, the bacilli will be immediately recognised, and the patient may be safely sent to the special wards. The sowing on serum will allow a confirmation of the diagnosis by culture and inoculation. If the microscopic examination does not show the bacillus, it is necessary to place the child in an isolation chamber, and await the results of the cultures. The installation of such a service would not only have good results from a practical standpoint, but it would be valuable for the instruction of students and for the advancement of our knowledge of microbic anginas.

Do the bacilli of diphtheria persist in the pharynx after the disappearance of the false membranes?

Let us take, every day, from a person affected with diphtheritic angina, a fragment of false membrane, and let us examine it under the microscope after staining it on the coverglass. As long as the pseudo membranes remain adherent and reproduce themselves easily, we will see quantities of the specific bacillus; but these become rarer as the disease becomes cured and the membranous coating becomes disintegrated. The change in the consistence of the false membrane corresponds to its invasion by common microbes. The sowing upon serum permits one still better to follow the disappearance of the bacilli, than the microscopic examination. Frequently, they persist as long as the membranous coating and disappear with it. We can cite numerous examples of sowings made the day following the disappearance of the membranes, which gave none of the specific colonies.

There is a striking contrast between the appearance of tubes sown at the beginning of the disease and those sown when the mucous membrane has again become healthy. In twenty-four hours the former show numerous diphtheritic colonies; after several days the latter often have only islands of common microbes.

Besides we must not forget that our observations are made in hospitals, and that the antiseptic washes and painting of the pharynx have destroyed the greater part of the bacilli which are no longer protected by a thick layer of fibrine. When the treatment has ceased and the child is returned to its parents, it may happen that some bacilli which have been spared may give rise to a new culture. This has been several times noticed by us.

The rapid disappearance of the bacillus of diphtheria is not always the rule; we may find it still, with all its virulence, in the pharynx of persons who have just had the disease, when the pseudo-membranes no longer exist and the mucous membrane is perfectly healthy. Mucus, taken by scraping the tonsils and pharynx with a platinum spatula and then sown on serum, gives specific colonies several days after the disease has disappeared.

We could multiply these examples but those which we have just cited are sufficient to show that the virus persists in the throat sometimes several days after the cure is complete. The danger of contagion does not disappear with the disease. Individuals who have just had diphtheria should not take their place again too quickly in the family, office, or school. It is necessary not to dismiss the patients from the hospital because they no longer have false membranes, and as it would be inconvenient to keep them in common wards, it will be necessary, in diphtheria hospitals, to arrange places reserved for convalescents where they will be submitted to antiseptic washings of the mouth for several days longer. We are convinced that in a time not far distant, the doctor will not allow any diphtheritic patient to leave the hospitals until he is satisfied by numerous sowings that they no longer have the specific bacillus in the throat. The precautions which we propose are not directed against an imaginary danger. Every practitioner can cite epidemics of diphtheria carried by children who have had the disease some time before. It is then well to be warned that the germ of diphtheria may be preserved, not only in the bandages and clothes, but also in the throat.

What is the extreme duration of the preservation of bacillus of diphtheria in a virulent condition in the throat?

It is difficult to answer this question, as the observations made in hospitals are affected by treatment, and interrupted by the departure of the patients. We need exceptional conditions in order to be able to follow the convalescents into their homes. We have been able to do this in some cases and here is one example which we have received:

R. P. Six and a half years. Serious case. Entered hospital June 3rd, 1889. June 18th, left hospital. June 28th, a cultivation only gave one virulent colony.

Fourteen days after the disappearance of the false membranes, he still had virulent bacilli in the throat. It is not necessary to multiply cases to show that they would be found for a still longer time. This persistence of the bacilli should be met with especially in unrecognised cases or in such as are badly cared for. Are not these the cause of relapses, which are not extremely rare? A chill or some other cause leads to a change in the mucous membrane, the bacilli finding a favorable surface will give rise to new cultures and will reproduce the disease.

The conclusion of this chapter will be that, in diphtheria, the specific bacillus can disappear from the mouth at the same time as the false membranes, or it may persist some days after them, or it may remain in a virulent condition for a considerable time, how long it is impossible to determine.

### Preservation of the Diphtheritic Virus outside the Organism.

The bacillus of diphtheria remains living for a very long time in cultures; it is not rare to find active colonies on tubes of serum which have remained more than six months at the temperature of the warm chamber. Cultures in bouillon could still be revived after remaining five months at 33°, and after two months at 39°. Shut up in closed tubes, without air and protected from the light, they preserved for a still longer time their vitality and their virulence. Bacilli contained in such tubes, dating thirteen months

have given us active cultures. Spores, however, are not formed in these old cultures; the microbes are swollen or elongated; they stain badly or not at all, but they die like the young bacilli when they are heated to 50°C.

Bacilli from cultures on serum have been dried and preserved at 33° and at ordinary temperatures, protected from light; those at 33° no longer gave cultures after three months, and those at ordinary temperatures were dead in four months. At a temperature of 45° they were sterile after four days.

Experiments made with false membranes are more interesting, because the debris of the pseudo-membranes and of the dried diphtheritic sputum often give rise to infections.

A false membrane was removed from the trachea of a child at the moment of tracheotomy. A part was sowed on serum, the rest was folded in a piece of linen. When it was dry it was folded in paper and placed in a cupboard at the temperature of the room. Numerous colonies developed from the first sowing on serum in twenty-four hours. Three months afterwards a new sowing was made from the dried membrane. After twenty-four hours in the oven the surface of the serum was covered with many colonies of the diphtheritic bacillus. After five months the dried membrane still gave colonies on serum; they grew a little more slowly and were less numerous, but they were formed by fine examples of the bacillus.

If the debris of such a false membrane had fallen upon a coverlet, mattress, or on the floor, it would be dangerous for a long time to those who were exposed to the contact of dust from it.

Another false membrane, dried in the same manner on a bandage, and equally rich in bacilli, was preserved suspended in the air and exposed to the sun and rain during the month of April and May, 1890. The sowings which had been made from this membrane exposed to the weather for a month and a half, gave no diphtheritic colonies. Under the action of the sun and of moisture alternating with dryness, the virus had been quite rapidly destroyed.

Cases where the disease appeared to be communicated by bandages which had been used for diphtheritic patients are not rare; some are cited which were due to clothing or bedding unused for two years. From what we have just seen, it is especially objects enclosed in a place where the air is not changed often, protected from the sun and moisture which remain dangerous for a long time.

In a moist state the virus does not resist a temperature of 58°C kept up for a few minutes. Boiling water, then, is always sufficient for disinfecting bandages and objects soiled by diphtheritic products. But the dried virus withstands for more than an hour a heat of 98°C. The resistance of dried virus to the various destructive agencies explains the persistence of diphtheria in certain localities, and we can understand why the installation of isolated wards have not sufficed to supress inside cases in certain hospitals. For the disinfection of bandages, clothing and bedding steam ovens under pressure are specially convenient. We know of some fine results obtained by Dr. Sevestre, in the *Hôpital des Enfans-assisties*, since he has caused the heating in a steam chamber of all the objects which have been in contact with diphtheritic patients. This simple practice has caused an almost complete disappearance of inside cases formerly numerous in that establishment. It is necessary to put in the oven not only the clothing, but also the bedding in which the children have been brought to the hospital, and the clothing of persons who have brought them.

The methods which have succeeded in the hospital ought to be applied in the city in the case of patients. Sanitary rules can contribute much to the disappearance of diphtheria; but what is necessary to efface it completely is a change in the habits of thef population, which is not enlightened on the subject of the necessity of the disinfection od objects soiled by the patients. If every physician undertook to persuade families to senh clothing and bedding to the steam-ovens many cases of diphtheria would be suppressed; but in order to convince others it is necessary to be convinced oneself."

4. *Actinomycosis*—This disease which has during several years past been observed on this Continent especially by the inspectors at the great Chicago stock-yards, has become likewise, the subject of observations by veterinarians and stockmen in Ontario. Its

character as a disease often remaining local for many months, had formerly prevented it from being reckoned amongst diseases of a contagious and constitutional character. But as its real character has become better known, and investigations have shown a tendency in the disease to spread, much as tuberculosis seems to spread amongst cattle, the grave nature of the disease is becoming fully realized, and laws looking to its limitation have been passed by various governments.

Amongst the most comprehensive reports on the disease is that contained in the 1889 Report of the Agriculture Department of Great Britain by Professor Cruickshank, pathologist to the department. The disease had long been known in England under local designations, as wens, clyers, etc., and was generally considered as indicating a scrofulous tendency in the animals suffering from it. In 1887 Cruickshank undertook a special study of the disease. The first case specially examined by him is described as follows :

"In June 1887 a black heifer about three years old was sent to the Royal Veterinary College. She had a large tumor in the parotid region measuring eight inches by ten. The tumor was covered with a thick, black, smooth, leathery crust, which presented at several places fistulous openings from which on steady pressure a quantity of yellowish muco-purulent discharge escaped.

The disease was regarded as scrofulous in nature, and I was informed that these tumors were extremely common in Scotland, where they were known as "clyers." The heifer was emaciated, salivated freely and had a cough. What appeared at the time to be the most interesting point in the history of the case was the report that the heifer was one of several beasts affected with the same disease.

My suspicions as to the true nature of the disease were aroused on making an examination of the tumor, and carefully observing with the naked eye the appearance of the purulent discharge, I therefore collected some of the latter in test-tubes for further examination under the microscope. On spreading out some of the discharge with needles on a glass-slide, the little grains which I had already seen were rendered still more clearly visible to the naked eye, and on covering the preparation with a cover-glass and examing first with a low, and then with a high power, the characteristic and familar tufts of actinomyosis were readily demonstrated."

He found on a visit to Norfolk that the disease had long been known there, but it was more prevalent than usual. He found that local cattlemen were in the habit of burning out the tumors; and that if thoroughly done the tumors dropped out and the animal got well.

It seems to affect animals mostly between three and five years, and occurred equally amongst the home-bred and those that had been imported from a distance. Referring to a number of animals affected, Cruickshank says :

"I found on this farm that no less than eight per cent. of the animals were affected, that most of them had growths in the parotid, submaxillary or prae-pharyngeal regions, but in some cases the growth appeared in other parts of the body."

At times the disease extends to the tongue, post-pharyngeal and nasal chambers, obstructing breathing, and apparently from pus from the abscesses causes general wasting, and finally death.

Speaking of the generic character of the disease, Cruickshank says :

"It is a chronic inflammatory affection characterized by the presence of a special microphyte, which by irritation produces a neoplasm composed of round cells, epithelioid cells, giant cells, and fibrous tissue. These neoplasms form nodular tumors of various sizes. In some cases there is a tendency to develop very large tumors, and in others, to break down early and suppurate. Calcification takes place in the fungus tufts. Actinomycosis so closely resembles tuberculosis in its histological character that it may be compared to a mimicry of tuberculosis."

The disease also affects man, pigs and horses. Bovine actinomycosis is especially prevalent in river valleys, marshes, and on land reclaimed from the sea.

"The disease occurs at all times of the year, but general experience leads to the belief that it occurs more commonly in the winter."

Regarding the cause of the disease Cruickshank says ;

"The fungus may be detected with the naked eye in the muco-purulent discharge, or in a scraping from the cut surface of the growth. The tufts of the fungus vary in size under different circumstances, from that of a grain of fine sand, to that of a pin's head. If the pus or scraping be spread out on a slide and examined against a dark background, the grains appear to be white or yellowish white in color, but if examined by transmitted light they appear distinctly brownish." "On examining with a higher power under the microscope, spherical, ovid or reniform bodies are to be seen which are either typical rosettes of clubs of granular masses, with here and there a club-shaped body at the periphery."

Such then are some of the salient features in the history of this disease. The exciting cause so readily made out by the miscroscope, while explaining the source of the

disease yet leaves much to be described as regards its life history. Is it indigenous to the tissues of the animals ; is it there propagated, and does it spread from thence to other animals, as does the bacillus of tuberculosis ?

Or is its natural habitat like ergot upon grains or grasses, and being introduced into the mouth, occasionally finds a lodgement between the teeth or in mucous lacerations, and therefrom spread slowly through nutrition supplied by the tissues ?

The following abstracted from various German and French works present the most recent results of the study of this interesting fungus in those countries.

It is ordinarily a disease of domestic animals being very widely distributed, but here and there occasionally, are reported cases occurring in man, and as it frequently leads to serious consequences, considerable work has been done during the last few years on the aetiology of the disease and its communicability from one animal to another and from animals to man.

In animals the disease often shows considerable differences according to the seat and character of the neoplasm. We find almost always tumors, the internal parts consisting of embryonic tissue and showing a yellowish centre. Sections of the tumor appear sometimes like a fibroma, sometimes like a fibrous sarcoma. In the centre of these tumors are found little tubercles varying in size but quite visible to the naked eye, having a yellowish, greyish or reddish color ; these are enclosed in a puriform liquid or in true pus and on account of this the tumour has a spongy character.

In each of the tubercles one can find a little yellowish granule the microscopic characters of which will be described later on. Around this yellow granule in the tubercle are found giant cells and epithelioid elements mixed with lymphatic elements. There is no tendency to caseous degeneration as in true tuberculosis, but frequently the central portion becomes calcified. The tumor may open spontaneously and cicatrisation take place, but oftener the disease spreads by means of the lymph channels and, the animal finally dies.

Cornil and Babes distinguish amongst animals the following varieties : Myelogenic actinomycosis, located in the vertebral column in the interior of the bone ; periosteal actinomycosis consisting of fibrous or sarcomatous tumors surrounding the bone, localization in the maxilla and vertebral column being most common. A very characteristic lesion is that of the tongue of cattle when that organ becomes as hard as wood and is the seat of a diffuse neoplasm.

Tumors of the skin are frequent, also tumors of the pharynx and neighboring lymph glands ; the disease has also been observed in the stomach and lungs.

In pigs actinomycosis appears as a cold abscess of the neck and mammae. This latter has been produced artificially.

In the horse, actinomycosis of the spermatic cord has been observed following castration.

In man, Cornil and Babes recognize the following forms of the disease :—

(*a*) A maxillary and cervical form. It may begin here as a tumefaction of the angle of the inferior maxilla, but spreads from that point in various directions, sometimes reaching the base of the cranium, perforating it and attacking the dura mater and brain tissue. (*b*) Limited neoplastic form. (*c*) Thoracic form. (*d*) Lumbo-abdominal form. (*e*) Pyaemic form. (*f*) Peritoneal form.

The characteristic feature of the disease wherever found, is the presence in the pus of the small granules mentioned above. These granules if crushed under a cover glass and examined under the microscope show a characteristic star, or ray-like appearance, the points of the rays being club shaped. These club-shaped rays are the external portions of the parasite, and from their appearance it takes the name of ray fungus or actinomycosis.

The researches of the last few years have thrown a considerable amount of light upon the nature of this parasite. A close study of the grains shows that in the interior they are composed of a felted mass of mycelial threads. These threads are branched and apparently show a spore formation, the spores afterwards germinating. The club-shaped rays upon the outside of the clumps of parasite, are supposed to be due to a degeneration of the ends of the mycelial branches, a gelatinization taking place.

The parasite is considered by the latest authorities to belong to the pleomorphic group of bacteria, possibly to the genus *Cladothrix*.

The most important consideration, however, in connection with this parasite is the possibility of its communication from one animal to another, or from an animal to man.

That it does arise in man, apparently, not by a process of infection, is shown by Bostroem's observations in a number of cases in which he showed that in several cases of *actinomycosis hominis*, the growth of the parasite had commenced at a small particle of chaff apparently, most commonly from oats. These particles become imbedded in the tissues and form a *nidus* from which the growth of the parasite started.

He considers it likely that the parasite is in most cases carried into the tissues in this manner.

The same author considers it as unproven, that the disease may be communicated from animals to man, or from one animal to another. His experiments on the inoculation of the disease terminated unsuccessfully. Certain other authors, however, claim that they have transferred the disease from man to animals. A certain amount of clinical evidence also exists to show that the disease may sometimes be conveyed from animals to man. One of the most interesting cases is mentioned by Maydl (International Klin. Runschau, 1889) in which a veterinarian engaged in meat and cattle inspection was required to examine a large number of dirty cattle passes; in doing this he moistened the volar surface of the right thumb with his tongue. Some time afterwards he felt a soreness on the tongue. In a few days there formed a small lump about the size of a pea. After two months it reached the size of a bean, and when opened was found to contain about a cubic centimetre of pus containing actinomycosis granules.

Another case is mentioned in which a coachman who developed actinomycosis of the jaw, apparently communicated the disease to his wife.

The following is an account of a case of actinomycosis, a specimen from which was forwarded by Dr. Walmsley, of Elmira, to the Board for examination. Regarding the specimen the doctor says: "I succeeded in getting the specimen I sent you by working upon the man's sympathy for a neighbor who has a child that I claim is suffering as the result of contagion from a cow's milk, from which it was raised, the cow being the calf of a cow that had a similar trouble of the jaw when pregnant with and raising this calf."

The result of laboratory examination is reported by Mr. J. J. MacKenzie as follows:

The growth in question consisted of a "wen" like structure about two inches in diameter, situated upon the anterior portion of the upper jaw. It was cut out along with a portion of the bone, and it arrived at the Health Department June 17th, wrapped in a cloth previously soaked in a strong solution of mercuric bi-chloride.

On its arrival the whole mass of tissue was hardened in alcohol.

The gross appearance was as follows:—

The interior of the wen was of a spongy nature filled with a large number of small cavities filled with granular masses of pus. The bone was partially destroyed and enclosed small masses of pus.

A superficial examination of these granular masses under the microscope gave no indications of fungoid growth.

The wen was cut into small pieces, and portions of it imbedded in gum and in paraffin, but in both cases the granular masses fell out during staining and when mounted no indications could be found of fungoid growths.

Other portions were then stained in haematoxylin and imbedded in celloidin. These on being cut and mounted showed the presence of the ray fungus in the interior masses of pus. However, special staining methods were necessary in order to bring out the typical clubs of the fungus.

The two methods used were those mentioned in Cruickshank's report upon actinomycosis in Great Britian.

The first was the so-called Praut's method. The sections were stained in a mixture of fuchsin and carbolic acid (Ziehl's solution), then decolorized in a solution of picric acid, dehydrated in alcohol and cleared in oil of bergamot, clove oil not being used on account of its solvent action on celloidin. The result of this method was to stain the clubs a deep red and the rest of the tissue a yellow (picric acid stain).

The other method was that of Gram. Sections were stained in a solution of gentiana violet in aniline water and decolorized in a solution of iodine in potassic iodide, afterwards in alcohol restained in methylene blue, then oil of bergamot and mounted in balsam. By this method the clubs were stained deep violet and the best results were obtained.

These staining methods all showed that the granules were made up, first of a mass of mycelium in the centre, then the characteristic ray-like arrangement of the fungoid clubs, and finally a mass of pus upon the outside.

There was consequently no doubt as to the disease being actinomycosis. No cultures were attempted nor inoculation experiments tried as the strong solution of mercuric chloride in which the specimen had been soaked must have killed the fungi long before it reached the Department.

Whatever may be the final conclusion to be arrived at regarding the contagiousness of the disease, its similarity to tuberculosis and the condition of the tissues in those animals where its effects have become constitutional, have led to the passage of a clause as an amendment to the Public Health Act of Ontario already referred to, and of which the following is a copy :—

2. Sub-section 3 of section 99 of the Public Health Act as added by section 1 of the "Act to amend the Public Health with respect to the Sale of Milk and Meat from animals affected with Tuberculosis," is repealed and the following substituted therefor :

(3) Whenever a medical health officer from his own knowledge, or from information received from a veterinary surgeon or other qualified person, has reason to believe that any animal, or the meat or milk of any animal, is affected with any contagious or infectious disease named in section 2 of the Animal Contagious Disease Act, chapter 69 of the Revised Statutes of Canada, 1886, or with the disease known as wens, clyers, actinomycosis or osteosarcoma, he may take action as provided under sub-section 1 of this section.

5. *Rabies (Hydrophobia).*—The past year will be memorable in the annals of the Board as being the first in which any outbreak of rabies in the province has been brought to its official notice.

The following is a brief summary of the facts relating to the outbreak :—

May 12th, 1890, a communication was sent to this board by A. O. Graydon, Esq., secretary of the Local Board of Health at London, Ont., in regard to a disease which had broken out amongst the dogs in London and the surrounding districts which seemed to be a form of rabies. The authorities of the city of London had ordered all dogs to be muzzled for a period of three months, and the local board desired this board to enforce a similar order for the county of Middlesex.

May 21st, a second communication was received from Mr. Graydon enclosing a description of a case of rabies in the city of London and pressing the Government to take action in regard to a general Muzzling Act for the county.

May 28th. Dr. Graham, medical health officer at Dorchester station, advised the Provincial Board of a case in which a man was bitten by a rabid dog. A pig bitten by the same dog showed symptoms of rabies about three weeks after being bitten The man was bitten on May 10th and on June 14th he was sent to the Pasteur Institute in New York for treatment. He received a series of injections after the Pasteur method and recovered completely without showing any symptoms of the disease.

There seems no doubt, however, that the dog in question had rabies, as the animals bitten by him all showed undoubted symptoms of paralytic rabies before they died or were shot.

The secretary of the Board visited Dorchester station personally and from his examination of a pig suffering from the disease during his visit he has no doubt that it was paralytic rabies.

Appended is a report of the laboratory experiments on the subject.

The inoculation experiments carried on with the spinal cord of a pig and cow which had died from the effects of the bite of this dog resulted negatively. One rabbit recovered from the effects of the inoculation, and three others died with symptoms of blood poisoning. It is most probable that these negative results were due to contamination of the fluid by septic organisms.

*Report of the Investigation of the Outbreak of Rabies at Dorchester.*

June 16th, 5.30 p.m. The head of pig which had died of suspected rabies arrived from Dorchester.

June 17th, 10 a.m. Unpacked the head. It had been cut off from the body between the first and second vertebrae and had been simply packed in sawdust and ice in a tin can. Apparently no anti-septic precautions had been taken.

The upper part of the skull was dissected away after being washed with sublimate solution, instruments being carefully sterilized and the brain exposed.

It was found to be in a badly disorganized condition, the tissue soft and semi-fluid.

A small portion of the medulla was placed in a sterilized dish and divided into two parts each part being shaken up with sterilized bouillon.

Tube 1 was left in a warm room.

Tube 2 in a cold cellar.

June 18th, 2 p.m. Tube 1 had become slightly putrid and was discarded.

Tube 2 was apparently in good condition.

Two rabbits were trephined and about 2 c.c. from tube 2 was injected under the dura mater of each just above the hemispheres.

Rabbit 1 was a large black buck.

Rabbit 2 a small doe not full grown.

4.30 p.m. Rabbit 1 was still under chloroform.

Rabbit 2 partially recovered.

6.00 p.m. Rabbit 1 still somewhat stupid.

Rabbit 2 quite recovered from operation.

June 19th. Rabbit 1 somewhat stupid from the operation.

Rabbit 2 apparently quite well.

June 20th. Rabbit 1 quite well.

Rabbit 2 restless, respiration very rapid.

June 21st, 1 p.m. Rabbit 1 quite well.

Rabbit 2 respiration very slow, rabbit weak, evidently dying.

June 21st, 6 p.m. Rabbit 2 died, evidently from septicaemia.

Rabbit 1 completely recovered from the operation and August 13th was still quite healthy.

June 30th. Brain and cord of a cow which had died from supposed rabies, arrived.

It had been taken out as aseptically as possible, and had been placed in a 30 per cent. solution of glycerine. It was appearently in very good condition.

July 1st. In bouillon, tube 3, a small portion of the end of the cord was shaken up.

Tube 4 cord was removed from membranes, beaten up in a mortar and shaken up with the bouillon.

Tube 5 cord was beaten up with the bouillon in the mortar.

Tube 6 cord beaten up in a mortar and shaken in bouillon.

Tube 7 medulla beaten up in mortar and shaken in bouillon.

July 2nd. Two rabbits were trephined and about two c.c. of tube 4 was injected into one and two c.c. of tube 5 into the other.

Both rabbits apparently recovered from the immediate effects of the operation, but late in the afternoon they both were in a bad condition; breathing rapidly and lying on their sides. Next morning both were dead. They both died in the course of the evening. Their heads were drawn back against the back When opened the various organs were found much congested, extravasations of blood in various parts of the body. The blood was found to be filled with a bacillus resembling in general appearance the bacillus of rabbit septicaemia but somewhat larger.

The disease is also of interest from the fact that it enables the Board to bring to the notice of the Candian public some of the more recent facts which science has discovered with regard to the disease, and to point out how great value a central board of health becomes when such dreaded outbreaks occur.

It will be remembered that as long ago as 1885 M. Pasteur gave to the world the results of his experiments on the causation of the disease, and of those investigations which led him to conclude that it is possible to create an immunity to the disease in the persons of those bitten, if they are promptly treated.

It was natural that the general public, and especially the scientific world, should have viewed with incredulity such statements; but the experiments made with regard to creating immunity against charbon and chicken-cholera by Pasteur made him to be believed at least by his French confreres.

His claims were all the more wonderful since he had to confess that he was wholly unable to isolate any microbe as the cause of the disease, and could only state that portions of nerve tissue contain both the products of the disease in the system and the source of the protection to others.

In 1886 the discoverer of the vaccine against rabies had became so convinced of the merits of his discovery, and had received such credence as enabled him to announce that he was prepared to treat all bitten persons presenting themselves. Since that date the work has been regularly carried on, and since 1888 he has been enabled, through the liberality of the French Government in establishing the Pasteur Institute, to systematically treat persons sent from all parts of the world. In "Annales de L'Institut Pasteur" have regularly been published monthly tables showing the number of persons treated and the number of recoveries.

The tables divide the persons bitten into three classes:—

(*a*) The persons bitten by animals which by experiment are known to have been rabietic.

(*b*) The persons bitten by animals known to have been rabietic by veterinary examination.

(*c*) The persons bitten by animals suspected of being rabietic.

The tables have been collected and their result from January, 1886, condensed by M. L. Perdrix in the "Annales, Mars, 1890," and present features of interest.

He points out that column A varies somewhat from that given in the original tables since it has had added to it some cases which, appearing at the time in column C as suspected cases, afterwards were shown to be true cases, because either the persons or the animal which bit them had become rabietic. Thus, while the tables for three years from January 1st, 1887, to December 31st, 1889, gave in column A 982 cases for three years, this number became actually increased to 1,105. With this correction the following are the results of anti-rabic vaccination for the period :—

| | Table A. | | | Table B. | | | Table C. | | | Total. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number of persons treated. | Died. | Mortality per cent. | Number treated. | Died. | Mortality per cent. | Number treated. | Died. | Mortality per cent. | Number treated. | Died. | Mortality per cent. |
| 1886..... | 231 | 3 | 1.30 | 1,926 | 19 | 0.99 | 514 | 3 | 0.53 | 2,671 | 25 | 0.94 |
| 1887..... | 357 | 2 | 0.56 | 1,156 | 10 | 0.86 | 257 | 1 | 0.39 | 1,770 | 13 | 0.73 |
| 1888..... | 402 | 6 | 1.49 | 972 | 2 | 0.21 | 242 | 1 | 0.40 | 1,622 | 9 | 0.55 |
| 1889..... | 346 | 2 | 0.53 | 1,187 | 2 | 0.17 | 297 | 2 | 0.67 | 1,830 | 6 | 0.33 |
| Totals ..... | 1,336 | 13 | 0.97 | 3,241 | 33 | 0.63 | 1,316 | 7 | 0.53 | 7,893 | 53 | 0.67 |

In the mortality calculated in this table have been counted only the persons who have been seized with rabies more than fifteen days after the last day of treatment. We have in effect to consider that, amongst the persons who show signs of rabies in the fifteen days following the vaccination, the virus had already commenced its development during the treatment, because the animals inoculated under the dura mater after trepanning take about fifteen days to become rabietic.

The inspection of the above table shows :—

1. That the proportion of the deaths after treatment is very low (53 persons for 7,893 treated, *i.e.* 0.67 per cent).

2. That the mortality diminishes from year to year, thus :—0.94 in 1886 ; 0.73 in 1887 ; 0.55 in 1888 ; 0.33 in 1889.

This is due to a sure appreciation of the danger of bites and to a better application of the treatment.

At first it was difficult to decide what method of application was best suited to each particular case ; but it was finally determined in the most exact way that according to the gravity of the lesion, a special method was necessary. Thus in the case of serious bites the largest quantities of an emulsion of the spinal cord, were to be injected, to be repeated with other strong injections.

For bites on the head, which are particularly dangerous, however little serious they may appear, the treatment is more rapid and especially more intense, that is to say, that cords in a high state of virulence are injected several times.

By a close study of the several columns M. Perdrix concludes that it may be affirmed that at least two-thirds of the cases in column C were of animals really rabietic, and that 95 per cent. of all persons bitten were by animals really rabid. The mortality in column C is 0.57 per cent., or about two-thirds of the average in all the columns.

Other tables show that bites on the hands are the most frequent, being 56 per cent. of the whole. This is natural as by the hands a person most naturally seeks to defend himself.

The mortality is greatest from bites on the head, being 2.36 per cent., and it is these that mostly take rabies during treatment. Bites on the lower limbs and trunk are least fatal, as the teeth have been in many instances wiped on the clothing.

M. Perdrix points out that cauterization with a red-hot iron, if done within the first hour, has been made to some extent successful ; but even this has not prevented the disease developing in some cases.

Regarding the prevalence of the disease in different countries the statistics are so partial that the writer cannot give them ; but for France he shows by a map that the southern portion is much more troubled with rabies than the north, east or west. He points out that it is not due to temperature, but really to a disregard for sanitary regulations relating to the destruction of dogs and rabid animals. The disease has notably declined in some districts of France in three years. He further has, by a table, pointed out that the greatest prevalence of rabies is in the months ending winter and beginning spring ; diminishes in summer, and is least in September and October.

Such, then, is the result of the most modern work in the field of preventive medicine. In the case of the Dorchester outbreak, already referred to, it is most satisfactory to know that the precautions taken not only limited the local outbreak but served to rescue the person bitten from what would most probably have proved a fatal result.

The action to be taken in other cases will doubtless be more prompt, if not more successful.

The rarity of outbreaks of rabies in Ontario has hitherto caused the public to know little of how to deal with such cases. Some practical hints are taken from various sources which may be summarized as follows :—

*Rules for Treatment of Rabies.*

1. When a person is bitten dress the wound at once by cleansing it perfectly with a solution of carbolic acid, 5 to 100, or by corrosive sublimate, 1 to 500 parts.
2. At once prevent the circulation of blood from wound toward the body by cutting off circulation by a tight bandage of the part between the body and the wound, thereby making the wound bleed freely.
3. If on the head, prompt disinfection and subsequent free cauterization with a hot iron will be useful.
4. Dress wounds with absorbent cotton dipped in the disinfectant and carbolic solution.
5. Do not destroy the suspected animal, but shut him up where he will be harmless so that it may be determined whether he really is rabid. This will prevent much anxiety to all interested.
6. If it be a pig it will soon show true signs by its inability to swallow its food, its stertorous short breathing, a paralysis of the hind limbs, contractions of the muscles of the neck, and death within a few days.
7. If it be a cow it will become excited, bellowing, pawing the ground ; may attack those who approach; shows frequent straining, tremulousness of the spine and hind limbs, gradual loss of power to swallow, and then dies.
8. In all such cases the first step should be to protect those exposed to such animals by shutting up the animal for observation, and thereafter to notify the Secretary of the Provincial Board of Health.
9. If the animal die suddenly, the head and neck of the animal should be at once cut off and wrapped in a cloth soaked in carbolic solution, 5 to 100 parts, and expressed to the Office of the Provincial Board of Health, packed in ice.
10. If medical health officers, medical men or veterinarians have charge, they may do still better by cleansing all instruments for half an hour by boiling them, and after rapidly and aseptically removing brain and cord of neck, place them in a wide-mouthed jar (cleansed repeatedly with a disinfectant and thereafter with boiling water), containing enough glycerine, previously boiled and allowed to cool, to cover them. Forward the parcel by express to the Provincial Board of Health.

6. *The Flour-Moth Pest*:—The reported presence of this pest in several mills during the past year led me to institute an investigation, and to issue the following bulletin :—

*To Millers and Produce-men.*

Toronto, Oct. 15th, 1890.

Dear Sir,—You will remember that a year ago an official bulletin was published by this Board, on the Flour Moth (*Ephestia Kuhniella*), which was not only widely referred to in the daily press, but was also distributed to Boards of Health, members of the Ontario

Miller's Association, and to such other persons as it was known would be interested in the matter. The bulletin concluded with the following words: "But much more is to be done. We cannot yet be sure that it has wholly disappeared from those centres where its presence is known; and it is only too possible that it has made its appearance in other mills and produce stores, where its limited prevalence and ignorance of its character have caused it to be overlooked. For assistance, in discovering the latter we depend upon the intelligent observation of those most interested—the millers and produce men; for dealing with it in places where already known or yet to be discovered we promise such practical assistance as the great interests at stake demand and the means at our disposal make possible."

The measures which were taken by the Provincial Board and the Milling Co, on whose premises the moth appeared last year, have, I am glad to say, resulted in a complete eradication of the pest from said premises; but this Board and I have no doubt many millers have waited anxiously the onset of warm weather this year, to see whether the pest would again appear. Not having received any answers to the request contained in the above quotation, the Provincial Board had hoped the pest was eradicated from the Province. Determining, however, to settle the matter, an inspection of the principal mills and supply houses in Toronto has been made, with the result that the pest has been found in several large establishments. The Board, in view of the measures taken last year, not only to apprize millers and produce-men of the nature of the pest which threatened them, but also of the offers of co-operation in the endeavors made to stamp it out, should it again appear, has to regret that its endeavors have not been seconded by the persons more immediately interested. In view therefore of the great loss, which the reputation of the Province in the matter of pure grains and flours would sustain in its export trade, in addition to the health interests involved, should the pest become generally prevalent, the Board publishes herewith, not only the authority under which its inspections and those of Local Boards are made, but also the penalties attached to any violation of the statute in the matter of selling unsound grain or flour.

*Power of Medical Health Officer or Sanitary Inspector to inspect meat, etc.*

99.—(1) Any medical health officer or sanitary inspector may, at all reasonable times, inspect or examine any animal, carcase, meat, poultry, game, flesh, fish, fruit, vegetables, grain, bread, flour or milk exposed for sale, or deposited in any place, for the purpose of sale, or for preparation for sale, and intended for food for man; the proof that the same was not exposed or deposited for any such purpose, or was not intended for food for man, resting with the party charged; and if any such animal, carcase, meat, poultry, game, flesh, fish, fruit, vegetables, grain, bread, flour or milk, appears to such medical officer or inspector to be diseased, or unsound, or unwholesome, or unfit for food for man, he may seize and carry away the same, or cause it to be seized and carried away, in order that he may cause it to be destroyed or so disposed of as to prevent it from being exposed for sale or used for food for man.

(2) The person to whom the same belongs, or did belong at the time of exposure for sale, or in whose possession or on whose premises the same was found, shall be liable to a penalty not exceeding $100 for every animal, carcase, or fish, or piece of meat, flesh or fish, or any poultry or game, or for the parcel of fruit, vegetables, grain, bread or flour, or for the milk so condemned; or at the discretion of the convicting justices or magistrates, without the infliction of a fine, to imprisonment of a term of not more than three months. 47 V. c. 38, s. 39.

*Penalty for hindering officer from inspecting meat, etc.*

100. Any person who in any manner prevents any health officer or sanitary inspector from entering any premises and inspecting any animal, carcase, meat, poultry, game, flesh, fish, fruit, vegetables, grain, bread, flour or milk exposed or deposited for the purpose of sale and intended for food for man; or who obstructs or impedes any such medical officer or inspector, or his assistant when carrying into execution the provisions of this Act, shall be liable to a penalty not exceeding $25. 47 V. c. 38, s. 40.

It is hoped that the necessity for enforcing any of the provisions of the statute will be avoided by millers and others aiding the Board in the manner suggested; but it must not be expected that the Provincial Board and Local Boards are to be constantly at the expense of making periodic inspections of mills in a matter where it is so easy for persons, having the pest on their premises, to give notice of the same.

The Board further hopes that there will be no necessity for publishing the names of premises where such pests abound; but if the owners of such premises have so little

regard for the public interests as to send sacks infested with the ova or larvæ of the pest abroad, thereby carrying with certainty the pest to other places, the Board can assure such that it will not fail in its duty by giving such illegal procedure due publicity. Again asking the co-operation of all interested in the important matter of maintaining the reputation of Canadian grain and flour,

I have the honor to be
Your obedient servant,

PETER H. BRYCE.

In order to give the measures to be taken in stamping out this pest the widest publicity possible, we herewith publish them again :

1st. The foreign source of the pest must be remembered. Klein calls it the pest of the Mediterranean, and that this is so seems proved from the fact that the almost certain avenue of its introduction to this Province was in milled goods, imported as children's foods, consisting of Italian semolina, Indian cassava and Brazilian tapioca. It seems an essential, if we are going to avoid danger from this source, that no goods or bags be allowed to enter Canada from Mediterranean ports unless they are first quarantined in a warm place for a number of months, thereby giving the ova, if present in them, an opportunity to hatch out.

2nd. All bags which have already been used for transporting grain, flour or meal should be prevented entry into Canada unless subjected, under inspection, to thorough boiling or superheated steam. This, probably, is of all dangers the greatest, and one which the Dominion Government could carry out without any unpleasant delay or loss being the result.

3rd. Every miller in Canada, but especially those engaged in export and import trade, should make himself thoroughly acquainted with the appearances and characters of the moth at its various stages, and take means to at once destroy any individuals before they have had time to multiply. In this case a little prevention is worth many hundred times the same amount of cure. They may further facilitate the work of prevention by informing this Department at once of any outbreak and of the avenue by which the pest has entered. But assuming the pest to have been introduced, there are a number of points to be attended to.

(1) Destroy the moths. This can be done by closing the windows, doors or other apertures of the building, and, night after night, until all evidences of moths have disappeared, burn sulphur by placing it in shallow pans, upon a number of heated stoves, say small coal oil stoves, in different parts of the building and putting a match to it. *The note below describes another convenient mode of creating sulphur dioxide fumes.

(2) Search for evidence of the larva or caterpillar in all packages, bags, etc., of flour and meal, and, wherever found, at once superheat the flour in a dry kiln. Spread it out in a thin layer so that the heat can reach it and the packages, boxes, etc., containing it.

(3) Under no circumstances sell this material to other dealers, whether to mills or produce stores, bu have it treated with boiling water or steamed and fed to pigs.

(4) Where webs have appeared, either in the packages of meal and flour, in the bolting cloths and carriers, or in deposits of dust on ledges, along the walls, etc., it may be deemed certain that the larva has taken on the chrysalis stage. Hence it becomes necessary to make a close search in all these places for the cocoons or little masses of flour glued together, of say three-quarters of an inch in length. These swept down can readily be gathered up and burned.

It has, however, been already pointed out that owing to the habit which the larva has of retiring to some crevice, when not bidden in a package or deposit of flour, before passing into the chrysalis stage, we find them in innumerable places quite impossible to be reached by any brushing down process.

Two ways then, only are left for overcoming this difficulty. The one that first suggests itself is that of waiting till the chrysalis is burst and the moth appears and then kill the moth.

This, doubtless, may be followed with good results, *i.e.*, have the first moths appearing destroyed by hand and by subjecting the affected portions of a mill or building to repeated treatment with the fumes of burning sulphur every night when the works stop. If this be persistently followed out but little development of new forms will take place. It must be remembered that this work must be persistent and thorough ; abundance of sulphur burnt, again and again, being the sufficient condition of success.

Where, however, the larvæ have as it were gained possession of bolting-cloths and carriers treatment with steam under pressure driven throughout all parts of the bolting-cloths, carriers and other machinery has been found very useful in lessening the inconvenience from the spinning of webs and thereby the clogging of the machinery. The walls, floors and ceilings may further be treated with advantage by first brushing down all dust and thereafter spraying them with a solution consisting of a drachm of corrosive sumblimate to each gallon of water, by means of a gardener's force pump. Treatment with fumes from burning sulphur while parts are yet moist from this washing down will greatly aid in the destruction of any larvæ or cocoon forms which may be reached.

*To prepare sulphur fumes : Place a metallic dish containing hot ashes on some support in a pan of water, or place in an old pan or other vessel a bed of ashes at least 6 inches deep, and about 15 inches in diameter, and place the sulphur and saltpetre in a slight depression in the centre and ignite. The proper proportions are 3 lbs. of sulphur and 3 oz. of saltpetre per 1,000 cubic feet of air space. All doors, windows and other openings should be tightly closed before the sulphur and seltpetre are ignited.

The following report of the investigation is given by Mr. J. J. McKenzie, as also a letter from Mr. Gould, of Uxbridge, relating the result of his experiences with the moth. The mill of the Ireland Food Company, where it first appeared last year, had had the pest completely eradicated.

TORONTO, November 20th, 1890.

*To the Provincial Board of Health :*

GENTLEMEN,—During the months of September and October, I undertook, at the request of Dr. Bryce, an inspection of the flour mills and retail flour and feed stores of the city for the purpose of discovering the presence of the flour moth, which he had reason to believe had not been completely stamped out during the preceding summer.

The mills were pretty thoroughly examined, but it was not possible to overtake all the retail stores, consequently only those were visited which he had reason to suspect might be infected.

The moth was found to have obtained a foothold in two of the mills in the city :—A. B ——'s oatmeal mill, and the M —— mill.

In Mr. B ——'s mill the moth seems to have been present in considerable numbers during the early part of the summer, but he claimed that he did not know it was such a serious pest. An examination of the premises showed the presence of the moth flying about the office and mill, but especially in a dark cellar in which part of the machinery is placed.

The larvae with their webs were found in almost every spot where an accumulation of dust had taken place, and also numbers of the cocoons.

Mr. B —— was instructed as to the steps to be taken in order to rid himself of the pest, and he immediately began a process of cleaning and white-washing throughout the whole mill. The walls, etc., were swept down and the sweepings burnt, then the mill was white-washed throughout, and the cellar made lighter and airier by the opening of another window.

He has promised to take still further steps by burning sulphur and steaming, but as yet he has not done so. His mill was visited on November 18th., and although much cleaner and better ventilated, still the moth had not disappeared entirely, and it was pointed out to him that if he did not take more vigorous steps he would have trouble in the spring.

The M —— mill was troubled considerably during the summer by the moth, so much so that it was found necessary to abandon the cellar for grinding purposes. The moth is still present in the rooms on the first two floors.

They claim to have cleaned up carefully, white-washed and burned sulphur, but as yet they have taken no steps to disinfect their bags.

A number of the millers seem to have realized the necessity of protecting themselves, and some of them, for instance, McL —— and M —— of the esplanade, see that the bags that are returned to them are disinfected before being again used.

The retail stores are extremely favorable centres for the spread of the pest. Most of these dealers receive stock from several mills and thus assist in passing the moth on in the egg stage from infected to uninfected mills. Some of them admit having seen the moth during the summer, but as none of them keep a stock long on hand, it is only in stores where dust is allowed to collect that the moth would likely remain any length of time.

J. L ——, retail dealer, admitted having seen the moth in his store during the summer, but an examination in September failed to reveal its presence. The store is clean and light and the cellar is not used at all.

John C —— had seen the moth flying about during the summer, and a few were still found about the bags. There was more opportunity for the moth to breed in this store.

Joseph W —— had also seen the moth flying about during the summer months, but said that they had completely disappeared. A careful search, however, disclosed a few still, in various parts of the store.

A number of other retail stores were examined but no trace of the moth found.

In cases where the moth was found in the stores, the stores were dark or not well ventilated, and there were accumulations of dust which might easily serve as breeding places.

Had it been possible to overtake all the retail stores of the city, I have no doubt other centres might have been found, as several of the millers seemed aware of the presence of the moth in retail stores.

On account of the lack of interest which some of the millers have shown in the subject, a second bulletin, which is here appended, has been sent out to millers, retail men in the city, and local health officers in the Province

As a consequence of the sending of the second bulletin, Messrs. S —— & M ——, millers at Thamesville, have sent in some oatmeal which they suspected contained the Ephestia. An examination of it proved that the larvæ were present. In this case the larvæ had been developing in oatmeal, sticking to a bundle of oatmeal bags. The bags were all burnt.

A few days ago a package of cornmeal was sent in from the local health officer in Meaford, suspected to contain the *Ephestia*. The larvæ in it, however, turned out to be the common meal worm.

August 19th, Mr. G —— of Uxbridge called to-day to report *re* flour moth. He states that he took prompt measures to exterminate the moth at his flour, feed and grocery store in accordance with instructions of the Bulletin, immediately after consulting with you two months ago. All bags used were turned inside out and thoroughly boiled, and all boxes containing feed and flour were emptied, washed with hot water and smoked with sulphur. The boxes were smoked a second time and since then no moths have been seen. A few were noticed after the first treatment. A neighboring firm were also troubled with the moth, and they followed the same treatment with the same result.

Mr. G —— says that as far as he has observed, the insects infect wheatlets, cornmeal, and to a small extent, oatmeal, flour kept in paper sacks in the store was not troubled with them.

I have the honor to be, Gentlemen,
Your obedient servant,

JOHN J. MACKENZIE.

We have given above a summary of outbreaks of disease which, while placed in the category of contagious disease, are for the most part of a nature different from the so-called infectious diseases which have hitherto received the special attention of the boards of health. Their slow progress, so different from the acute infections had long made clinicians slow to conceive their zymotic character ; although the occurrence of groups of cases, led Valsalva a hundred years ago, to consider tuberculosis, at any rate as infectious. But it has remained for the progress of biological science to discover their true origin, and to explain from the characters of their micro-organisms the slow progress in the early stages of these maladies.

What positive need there is for legislation and executive action on the part of health authorities, state and municipal, is indicated from the prevalance, especially of tuberculosis ; and from the fact of its being the cause of more than one-tenth of the total mortality in almost all civilized communities, especially in temperate climates. The difficulties in dealing with it have already been noticed, and the failure as yet of science to discover either a preventative or a specific cure, makes the duties of all sanitarians the more urgent to educate the public and health authorities in all those measures of hygiene, which seem to be the only true prophylaxis, and to some extent, the only cure.

That much has been done in this direction has been proved by English mortality statistics ; but that infinitely more remains to be accomplished is obvious to all.

If from the age of Hippocrates to the present day, Medicine with its infinite theories has had to confess failure in endeavors to find a panacea for consumption, it seems almost too much to hope that the *fin du siècle* should see discovered the *elixir of life* which would crown with undying glory the discoverer and his age.

Yet as the scattered rays of the sun focussed through a perfect lens burn the dull coal into a glowing flame, and illumine the darkest recesses, so may it not be that the scattered rays reflected from centres of light in an ever-increasing number of laboratories of every science, wherein Nature is forced to reveal her hidden mysteries, shall be collected in some god-like intellect, and burning away the films of tradition and ignorance, cause to be laid bare and revealed to a suffering and hope-bereft world her divine and life-giving essence ?

Respectfully submitted,

PETER H. BRYCE.

# PART II.

## THE CHAIRMAN'S ANNUAL ADDRESS.

*To the Members of the Provincial Board of Health:—*

GENTLEMEN,—Having been a member of the Board since its formation in 1882, and having thus, like many of yourselves, been a witness of the growth and development of sanitary law, and its outcome, sanitary work in this Province, I wish to recapitulate briefly some of the important advances which have been made in the past, some of those whose good effects we are only beginning to enjoy, and some which, thanks to recent provisions, we may anticipate in the near future.

Prior to the year 1882, the municipal councils throughout this Province had the power, under Chapter 190, R. S. O., to appoint health officers. In times of epidemic they availed themselves of this law, but in ordinary times they did not regard it. The effects of foul water, badly constructed and leaking house drains, damp, filthy cellars and impure house air were but little enquired into. Disinfection, in the modern sense, was not carried out—isolation was rarely practised, even against smallpox. The vaccination of infants with humanized virus was pretty generally adhered to and performed, and this may account for the fact, that smallpox was not as deadly in its ravages in this Province as in other parts of the Dominion. Re-vaccination, except in times of epidemic, was rarely practised. As an illustration of how imperfectly municipal health work was performed at that period, it may be mentioned that during the years 1872, 1873, 1874, smallpox appeared in twenty counties of Ontario, causing 371 deaths. Such then were the condition prior to 1882, when after considerable discussion, an Act to establish a Provincial Board of Health was passed by the Legislature.

In this Act certain much needed clauses were enacted providing for the isolation of smallpox and the compulsory establishment of smallpox hospitals.

Clauses 3 and 4 thus define the powers given to this Board :—

" The Provincial Board of Health shall take cognizance of the interests of health and life among the people of the Province. They shall especially study the vital statistics of the Province, and shall endeavor to make an intelligent and profitable use of the collected records of deaths and sickness among the people ; they shall make sanitary investigations and inquiries respecting causes of diseases and especially of epidemics, the causes of mortality and the effects of localities, employments, conditions, habits and other circumstances upon the health of the people; they shall make such suggestions as to the prevention and introduction of contagious and infectious diseases as they shall deem most effective and proper and as will prevent and limit, as far as possible, the rise and spread of disease, and they shall when required, or when they deem it best, advise officers of the Government and local Boards of Health in regard to the public health, and as to the means to be adopted to secure the same, and as to location, drainage, water supply, disposal of excreta, heating, and ventilation of any public institution or building.

The board shall from time to time and especially during the prevalence in any part of the Province of epidemic, endemic, or contagious disease, make public distribution of such sanitary literature, and of special practical information relating to the prevention and spread of contagious and infectious diseases through the medium of the public press, and by circular to local boards of health and health officers, municipal councils, and in and through the public schools and otherwise as shall be deemed by them in the interest of the public health."

As you are aware the powers of this board were at that time of an advisory character. Unfortunately, however, this advisory feature had not proper scope, owing to the fact that very few municipalities had availed themselves of their powers to establish local boards. However, as a result of the investigations undertaken by committees of the board into various epidemics in the Province, owing also to the free circulation of sanitary literature, delivery of lectures and publication of reports on health matters, together with the public interest excited by sanitary conventions held at London, St. Thomas and Ottawa, and more particularly by a persistent agitation in favor of the appointment of local boards by the councils, a considerable impetus was given to health work.

After two years' experience, however, it was felt that better local organization was necessary. If executive work was to be carried on, it would be necessary to find a channel, through which the Provincial Board could reach the people. The outcome of this thought was the Public Health Act of 1884, which makes it incumbent on all municipal councils to form Local Boards of Health each year, immediately after the councils themselves are elected, and to possess all the powers hitherto vested in the councils regarding health matters.

In four months after the passing of this Act in the 447 townships of the Province, 184 local boards were formed, twenty-five of them having medical health officers, and nineteen of them sanitary inspectors, while seventeen had appointed both medical health officers and sanitary inspectors. In the 203 cities, towns and villages of Ontario, there were 180 local boards established and of this number 63 had medical health officers, 92 had sanitary inspectors, and 44 had both medical health officers and sanitary inspectors.

Part II. of this Act, which deals with the powers and duties of local boards is most important. When its provisions are properly carried out, local boards can, if composed of intelligent men, aided by a medical health officer and co-operated with by an appreciative council, grapple with the unsanitary evils of municipalities in a most effective manner.

In consequence of experience gained from an outbreak of smallpox at Hungerford, it was decided in 1885 to ask for further legislation. During that session the Legislature passed an Act to make further provision regarding the public health. This Act dealt principally with the appointment of medical health officers, their powers and duties together with removal of nuisances, etc.

In part I. of the Act of 1884, clause 3, and subsequent sections provide for an enlargement of the powers of this board during the prevalence of epidemic disease threatening the whole Province or any part of it. An instructive example, showing the wisdom of this provision of the law, was witnessed during the smallpox epidemic in Montreal in 1885. During that memorable year a great work had to be done,—the protection of this Province from smallpox, at that time raging in the Province of Quebec. To meet the emergency the powers of this board were made to extend all over the municipalities of the Province. The method of securing the public safety naturally remained with this board. As stated in the *Montreal Star*, 5th December, 1885, "two methods were open to us—on the one hand a rigorous quarantine might have been established on the Ontario borders, and all goods and passengers from Montreal might have been detained, the first until disinfected, the second till all chance of their propagating the disease had ended. This would have been the cheaper mode of working and would have done the greatest possible injury to Montreal. The other method open was what might be called intelligent sanitation, and this, as the least oppressive means of protecting Ontario against Montreal, was adopted."

To you gentlemen, who are familiar with the history of that epidemic and the success which attended our efforts, it will be unnecessary to explain in detail the plan adopted. Let it suffice to say here that the results obtained completely vindicated the wisdom of giving to this board powers of so extensive a character, and also brought out in strong relief the humane and discreet instincts of the board and its most efficient officers, who accomplished the work with a small outlay, and with the least possible interruption to trade and commerce.

However, when we remember that in spite of the existence of one large infecting centre in Montreal and ninety others in the Province of Quebec, only 146 cases with 16 deaths occurred in Ontario, we gain a clearer idea of the enormous influence of vaccination, isolation and disinfection in stamping out this loathsome disease.

Clause 38, Act of 1884, deals with contemplated systems of water supply, sewerage and drainage, and provides that plans relating to proposed public water supplies, or systems of sewerage shall first be submitted to the Provincial Board of Health. As you are aware the Board has been consulted about the water supplies of Brantford, London and several other towns.

Thirty-nine towns have established systems of water supply, and others have plans for their establishment under consideration. Fourteen of our towns have constructed systems of sewerage and others have the matter under consideration. The town of Brockville has constructed sewerage on the separate system. The Government has also introduced the intermittent downward filtration plan at the London Asylum for the insane. Several other systems of disposal of sewage have received attention from the board and experiments have been conducted in order to appreciate their value, notably at Guelph Agricultural College and the Belleville Institute for the deaf and dumb.

The Public Health Act of 1885 gave powers to this board to appoint a medical health officer in any municipality where the council had rights to do so. Providing also for the postponement of school or municipal elections during the prevalence of epidemics. Powers are also given for the purpose of disinfecting things or persons, entitling a board or officer of a board to employ force or obtain such assistance as is necessary.

Full provision is also made for the inspection of railway stations, steamboats and all public conveyances, their cleansing and disinfection, also for the detention of steamboats, railway cars or anything contained thereon or persons travelling thereby.

Providing also for restraining the departure of persons and conveyances from infected localities, or the removal of persons living in infected localities, or for requiring the appointment of sanitary police.

In 1886 the Board undertook the preparation of a manual of hygiene for schools and colleges. This work was authorized by the Minister of Education for use in all the schools under the control of the Education Department.

The Public Health Amendment Act, of 1886, provided for power to take possession of land or unoccupied buildings for hospital purposes, and also the proceedings to be taken whether the owner was a consenting party or not. In this year also an Act was passed to amend the Act respecting Vaccination and Inoculation.

In 1887 an Act was passed *re* school protection against infectious diseases, providing also for the regulation of ice supplies. Also a remedy for a tenant when the local board neglects to take action. Providing also for inspection of slaughter houses outside the municipality, as well as for the inspection of dairies. The powers of the board were also materially increased.

In 1889 an Act was introduced, which provided that stipendiary magistrates could be appointed to be health officers; also providing for the appointment of sanitary inspectors, etc.

It was found in practice, that a serious defect existed in the legislation of 1887, which provides for inspection of cattle, from the fact, that it is nowhere definitely stated what diseases in cattle constitute unsoundness within the meaning of Section 99 of the Public Health Act, by which power is given to a medical health officer or sanitary inspector to inspect and seize all unsound animals, meat and milk in preparation for sale or exposed for sale. A short bill was introduced in 1890 to explain the ambiguous terms referred to. It is entitled, "An Act to amend the Public Health Act in respect to the sale of milk and meat from animals affected with tuberculosis."

This Act provides, among other things, that upon any prosecution for keeping diseased animals, meat or milk for sale as food, scientific examination may be made of the suspected meat or milk.

As an endeavor to assist medical health officers, who for various reasons, may not be in a position to do the necessary bacteriological work in order to definitely settle whether the flesh or milk of a certain animal is or is not affected with tubercle, this board has advised the Government to establish a chemical and bacteriological laboratory in which such scientific work may be done.

Efforts were made during the past year, with the assistance of the Hon. Mr. Drury, to establish this laboratory. I am also happy to state, that it has received the earnest attention of the Hon. Mr. Dryden, Minister of Agriculture. The premises, which we now occupy at 172 Yonge street, are, as you will perceive, sufficiently large and commodious. In addition to a board room, a room for clerks, a secretary's office and library, there are two rooms devoted to chemical and biological work. These last rooms have been fitted up with all the essentials necessary for such work, and additions will be made from time to time as occasion may require.

For bacteriological and chemical work the board has been fortunate in securing the services of J. J. McKenzie, B.A., late assistant of Prof. Ramsay Wright, at Toronto University biological laboratory, who will assist Dr. Bryce in the scientific portion of the work.

As practical sanitarians you are aware that much mystification exists in the public mind about the origin of tubercle, and it is reasonable to believe that in endeavors to lessen its prevalence, local boards would be much assisted by reports from the scientific department of this Board, showing that the bacilli tuberculosis had been discovered in selected samples of meat or milk or the sputa of persons, who had died with that disease.

Diphtheria has in some instances been traced to impure water, used in washing the utensils of the dairyman. Should an outbreak of this too common disease be supposed to be due to this cause, the suspected fluid can be speedily examined, reported upon, and a suitable course decided upon with little delay.

Samples of water, supposed to have been instrumental in producing typhoid fever, may be also sent to our laboratory. The water can be here tested, chemically and biologically, and a definite opinion arrived at, which will enable the medical health officer to take action in closing the suspected well or not.

In addition to tuberculosis, other diseases of animals, viz.: charbon and actinomycosis, or lump jaw, which have already engaged our attention, may be studied and reported upon.

Experiments may also be conducted to determine the effects of different plans for the disposal of sewage, and the effects of raw and filtered sewage, when allowed to run into streams and lakes. Comparison can be made of the results of various methods for disposing of sewage, definite conclusions drawn, and advice given to municipalities as to the best course to pursue.

Experiments may also be made in the destruction of garbage, examination made of the gases of combustion proceeding from the furnace, and conclusions drawn as to the effects of allowing these gases to escape into the atmosphere of towns. Experiments in removing the smoke nuisance might also be instituted and different systems of ventilation might be tried. In fact, without going into further detail we may say that this laboratory will enable the Board to study, in the light of modern science, the basal facts of many of the diseases and nuisances, which have occupied our attention ever since the board was established.

In this too brief and therefore imperfect review of the more important work of the board, it would be ungracious to forget the signal advantages that have resulted from the Association of Medical Health Officers of Ontario. Engaged as these gentlemen are in sowing the seed of sanitary truth in their municipalities, they have proved to be our most powerful allies. It will be doubtless a source of unfeigned pleasure to them to learn, that the board is now able to place at their disposal the means of working out to their satisfaction those problems, often difficult of solution, which beset their daily work.

J. J. CASSIDY.

## REPORT ON SANITARY PROGRESS IN GREAT BRITAIN AND ON THE CONTINENT.

*To the Members of the Provincial Board of Health:*

GENTLEMEN,—The *raison d'etre* for the appointment of our Board by the Ontario Cabinet eight years ago was clearly for promoting the study and investigation of preventible causes of diseases, and prominent among these causes may be considered the pollution of drinking water arising from near proximity of wells to latrines, cesspools or other sources of filth, but principally from the employment of streams, rivers and bays as the carriers of sewage and refuse from manufacturing establishments, thus rendering the water unsuitable for both drinking and domestic purposes, the old theory of the self purification of streams by oxygenation being no longer regarded as true. The attention therefore of our Board has been largely devoted for the last few years to the measures in use in various countries for remedying or preventing the evil and nuisances arising from these causes of pollution, and on the four visits I have made to England and the continent of Europe since June, 1882, I have been requested to make investigation into the different methods in use, reports of which have been yearly furnished. Last year I described the system recommended to me by the officials of the Local Government Board of Health at Whitehall, London, as one of the best in use in or near that great metropolis, viz.: the system employed at Friern Barnet, a suburb of the city; also reported upon the Webster system of purification by electrolysis, furnishing at the same time the very favorable review of the process by the London journals and scientific reviews. Since that time we have experienced a very great loss by the death of two most valued and active members of our Board and as it is possible that the gentlemen who have replaced them may not be fully informed of the exact nature of this process it might not perhaps be considered as altogether out of place if a brief recapitulation of the *modus operandi* of the system is repeated.

For treating sewage or impure water the fluid is allowed to flow through suitably constructed channels containing iron plates set longitudinally, the alternate plates being connected respectively with the positive and negative terminals of a dynamo. The sewage or other impure liquid in its passage through these channels becomes entirely split up by the electrolytic action. The matters in suspension in the sewage and part of the organic matter are not only removed by precipitation but the soluble organic matter is oxidised and burnt up by the nascent oxygen and chlorine is evolved, and thus oxidisation may be carried to any extent according to the amount of purification required. The chemical changes that take place in sewage when it is electrolysed depend on the fact that sodium, magnesium and other chlorides which are always present in sewage are split up into their constituent parts. The great radiuction of organic matter in solution by electrolyses cannot be produced by chemicals except at a prohibitive cost, besides entailing a large addition to the bulk of sludge and inorganic matters in solution which inevitably produce secundary putrefaction. Shortly after my arrival in England this year, anxious to obtain further knowledge of this electrolytic system, I visited the office of the association at St. Martins Place, Trafalgar Square, London, prepared with a map of our city of Toronto on which Dr. Canniff had marked for me the numerous outlets of sewage into the bay, which of late years has become a prolific source of danger to the inhabitants, and by this aid obtain an approximative opinion as to the practicability of employment of this system to the removal of this tendency to increased death rate of our population. Being informed, however, that Mr. Webster and his colleagues had gone to Salford in the neighbourhood of Manchester, where an investigation into the comparative merits of the system by electrolysis and that of the International system, by selected experts was to take place, I made an arrangement with the secretary of Mr. Webster's company for notifying them from Berlin, to which city I was in a few days to proceed for attendance at the International Congress, the day and hour that with my son Dr. T. Covernton, I would again visit their office. On this second visit we had the pleasure of meeting Mr. Webster and several members of the Board to whom we described the particulars required for a due conception of the difficulties heretofore connected with such a removal of our sewage that would completely prevent all danger of its returning to again endanger the health of our

population, and requested them after consideration of all the difficulties mentioned, to favor us at their leisure with their opinion. After a survey of the map and receiving answers to all questions bearing on the subject, their sanitary engineer stated that with a grand trunk sewer that received the sewage of the whole city frontage their system could then be relied upon for pouring into the lake an effluent so pure that all danger would be effectually set at rest, and the sludge could be utilized if not in demand for agricultural purposes, for filling up waste place sand that they would, as soon as the report on the recent trial of the two systems was in print, forward our Board a copy as also a written statement of their views of the applicability of the process of electrolysis to our need, furnishing us at the same time with a recent report of Sir Henry Roscoe's on their system. Before making extracts from this report I will briefly give extracts from the report of the International system which, as I understood, was the one on which the experts had been recently giving an opinion on, as opposed to that by electrolysis. This International process then consists of 1st The precipitation and deodorization of sewage by means of a magnetic precipitant and deodorant called "Ferozone" which is produced by a chemical process. 2nd The removal of the organic matter in solution and the aeration of the tank effluent by passing it through a specially constructed filter bed containing "polarite." In order to carry out the process the sewage on reaching the outfall works should pass through strainers to remove the larger solid bodies. Settling tanks must be provided of a capacity to suit the average hourly flow of sewage. The floors of these tanks should incline towards the centre where a gutter should be formed to convey the sludge to the outlet valve. Immediately before the sewage enters the tank it should receive a dose of ferozone the quantity ranging from three to eight grains per gallon. This can be effected automatically by placing baskets containing ferozone in the flowing sewage, or by using Beloe's patent automatic sewage mixing machine. In places where sewage has to be pumped and consequently steam power is available the Ferozone may be ground with water or sewage under edge runners and added to the sewage in a liquid form. This is done at Acton, but it should be understood that no power of any description is essential for the purpose of adding and mixing the ferozone. After the tank is full it should be left quiescent for a time; the exact period depends on the quality of the sewage under treatment, the sewage of no two towns being identical. Ferozone for sewage precipitation and deodorization is rich in ferrous oxide, alumina, magnesia and magnetic oxide of iron in a very spongy and absorptive condition. Sir Henry Roscoe in his report on polarite says "It is a pure and absolutely insolubie mineral substance specially manufactured for the filtration and purification of water, fluids and gases, contains no poisonous metal, is very hard, porous and absorptive It extracts iron and lead from water, and attacks and destroys organic matters in solution, is a powerful decoloriser and deodorizer by virtue of the polarised oxygen contained within its microscopic pores, is extremly durable and magnetic to a remarkable degree, will not rust and is therefore superior to spongy iron mixed with sand It forms practically an everlasting filter bed. The sewage manure obtained by the International process contains by analysis nitrogen equivalent to about 2 per cent. of ammonia besides phosphates, and at Acton is sold in a fine powder at thirty shillings per ton. Experts speak favourably of this process. Analysis of polarite shows presence of magnetic oxide of iron, silica, lime, alumina, magnesia, carbonaceous matters and moisture. The material called ferozone used for mixing with the sewage contains mainly sulphate and magnetic oxide of iron. Sir Henry Roscoe in a report on the metropolitan sewage question January, 1889, in speaking of deodorization of sewage at the outfalls says that any outlay of chemicals will not prevent a foul condition of the water. The total cost of chemicals, manufacturing expenses, land etc., etc., amounted in 1884 to forty-five thousand, seven hundred and thirty-eight pounds sterling. Notwithstanding this immense outlay the evils and dangers complained of by the outfall of the sewage into the Thames were not by any means removed. Treatment therefore by ordinary chemical processes may be viewed as seriously open to question. On this subject I extract from a report of Sir H. Roscoe on the metropolitan sewage question, the conclusions he had arrived at with regard to the various methods that had been employed by the metropolitan Board of Works for the disposal of sewage viewing them as based on false principles.

First.—As regards the addition of lime and iron in the proportions recommended.

Second.—As regards the addition of manganate of soda to the effluent after precipitation in the quantities suggested.

Third.—As regards the formation of underground settling tanks at Barking and Crossness, I now turn to the report from the same distinguished chemist on the Webster Electrical process. In a letter to the general manager of the Electrical Purification Association bearing date 18th October, 1889, he speaks of careful experiments as to the chemical composition of samples of sewage and of effluent obtained by Webster's system, at the experimental works at Crossness with London sewage during the period of investigation from August 13th to September 5th. *Re* the electrical method Roscoe says : " The quantity of sewage operated upon in each experiment was on the average about 20,000 gallons. The sewage for analysis was collected by taking samples every five minutes during the flow of sewage at the entrance of the shoot in which the sewage is treated electrically, mixing these together, and from these, samples were collected. The effluent was drawn off from the settling tanks by means of a suction pump twelve inches from the bottom of the tank." The analyses of these samples were corroborated by analysing other samples of the same sewage and effluent taken in another way, viz., by dipping at various points of the tank. The reduction of organic matter in solution is the crucial test of the value of a purifying agent. for unless the organic matter is reduced the effluent will putrify and become offensive. The total purification effected by the process is seen by comparing the analyses of raw sewage with the unfiltered element after electrical treatment. See table No. 21. Sir H. Roscoe also states that " I have not observed in any of the unfiltered effluents from this process which I have examined, any signs of putrefaction, but on the contrary a tendency to oxidise. The absence of sulphuretted hydrogen in samples of unfiltered effluent which have been kept for about six weeks in stoppered bottles is also a fact of importance. The settled sewage was not in this condition as it rapidly underwent putrefaction even when in contact in air, in two or three days. The effluents as collected from the tanks were found to contain a small amount of iron in solution in the ferrous state, and on exposure to air ferric hydrate was precipitated. In order to remove this iron it was arranged to pass the effluent from the precipitating tank over and through a filter of sand, and by this means oxidation and precipitation of the soluble ferrous salt was brought about and effluents were obtained free from iron, of bright appearance, but in no degree chemically purer as regards organic matter than in the unfiltered effluent." Sir Henry in a foot note remarks " Filtration is therefore entirely *superfluous*, except to remove sentimental objections, or where an effluent has to be discharged into a trout stream, the unfiltered effluent being as shown by the above report, as chemically pure as the effluent when filtered." Conclusions of Sir H. Roscoe's experiments are thus stated in his report. " First the active agent, hydrated ferrous oxide is prepared within the sewage itself as a flocculent precipitate. (It is scarcely necessary to add that the inorganic salts in solution are not increased as in the case where chemicals in solution are added to the sewage). Not only does it act as a mechanical precipitant but it possesses the property of combining chemically with some of the soluble organic matter and carrying it down in the insoluble form. Second, hydrated ferrous oxide is a deodorizer. Third, by this process the soluble organic matter is reduced to a condition favourable to the further and complete purification by natural agencies. Fourth, the effluent is not liable to secondary putrefaction.

*Brief abstract of Report* made by Alfred E. Fletcher, Esquire, F.C.S., F.I.C.H., the Inspector of Alkali Works, also Inspector under the Rivers Pollution Prevention Act of Scotland : " The result of my examination of this process has been to convince me of its efficacy in clarifying sewage, of removing smell and in preventing putrefaction of the effluent. I am of the opinion that such an effluent as I saw at Crossness can be discharged into a river or after passing through a thin layer of sand even into a stream without causing any nuisance." Filtration in the opinion of Sir F. Roscoe, however, is quite unnecessary. In the section of public medicine at the annual meeting of the British Medical Association, held in Birmingham, July, 1890, a discussion on the

electrical treatment of sewage occurred, at which Dr. MacLintock, Medical Officer of Health for the town of Bradford, after briefly reviewing the objections to be attached to the lime system, especially from its failure to remove the dissolved organic matter and by rendering the effluent alkaline, promoting putrefaction after admission into the stream or river, after also alluding to other modes of treatment which had been separately examined and considered, stated that in October of last year a deputation of the Bradford corporation visited the Electrical Purification Sewage Works erected at Crossness by Mr. Webster, the patentee of the electrical treatment of sewage, and an arrangement was made by which the former agreed to vote a certain sum of money towards the cost of experimental works at the Bradford Sewage Works, the company for electrical treatment undertaking the management of the works for such a reasonable time as might be deemed necessary. In the beginning of March of the present year the company began operations by treating something like 1,000 gallons per hour. It is needless here to describe the plant necessary for this treatment as I have in a previous page epitomised details from a prospectus issued by the Webster company. During the process the sewage is undergoing a change in its passage along the electrolytic shoots, gas is disengaged, the fluid is changing color to a slight degree, assuming a greenish hue, and most important of all a flocculent precipitate is being formed rapidly. In the first settling tank the greater part of this precipitate settles as sludge. The rest of the sewage flows into the second shoot, is there subjected to further electrical treatment and is formally allowed to flow through the different channels where a further deposit takes place. The effluent flows into a channel where it is still further aerated, and then into the Bradford Beck, a tributary of the river Aire. Dr. McLintock goes on to state that there can be little doubt that the active precipitating agent formed by the electric current is hydrated ferrores oxide, and that in a nascent condition. It is thus in its most powerful state and is continuously being formed, and it has been ascertained by experiment that the addition of the ordinary iron salt to the sewage does not give the same or anything approaching to the same results. Two reasons for this are suggested, the first being the fact that the iron oxide in the eletrical treatment is used just as it is being made, and the second that the arrangement of the plates and cells ensures the most intimate and thorough mixing of the precipitating agent with the sewage. The electrical treatment possesses this distinct advantage, that unlike lime it adds very little to the sewage and therefore limits the amount of sludge to the lowest amount consistent with the removal of solids from the sewage. It has been found that the grease, etc., present in the sludge tends to make it more easily burnt. The resulting ash contains a slight percentage of iron, and Mr. Webster suggests that this might make an excellent filtering medium not unlike the polarite in the Acton process. The effluent is bright looking with a slight yellowish green tinge, due no doubt to the small quantity of iron it contains. It is estimated from the analyses of Dr. Arnold Evans that something like 70 per cent. of the putrescible and noxious portion of the sewage was removed, and therefore by electrical treatment an effluent is produced fit to be allowed entrance into a stream. A very important consideration is the amount of secondary putrefaction that takes place on keeping. If the electrical effluent be kept in a stoppered bottle for some days it becomes very dark in colour, a change which does not take place if it be kept in an open vessel, and in such a vessel it may be kept for a long time without offensive smell being given off. Under the ordinary conditions of a running stream the effluent becomes materially improved from the aeration that has taken place.

Dr. McLintock sums up with the statement that there is every reason for the belief that in electricity as used by Webster's patent we have an agent capable of purifying even *the* worst sewage to such a degree as to render it fit to enter any ordinary stream. Further information with regard to this application of electricity by the Webster procers will be furnished shortly to our Board by the report of the company on the views of the experts appointed to adjudicate on the two systems I have so briefly described. There remains only one other system adopted in Birmingham for which is claimed great merit. The total area of the district drained 47,275 acres, the population five years ago was 619,693, ratable value two and a half millions of pounds. Area of sewage farm 1,277, allowing about two acres of land to a thousand persons. The members of the Society of Medical

Officers of Health who had proceeded in carriages to witness this method of sewage disposal had seen how thoroughly the two acres had done their work, the soil of the irrigation area being suitable for the purpose. The proportion of lime, eleven tons to twenty million gallons of sewage. The lime added in the form of milk of lime. The effluent after this mixture carried by a large conduit eight feet in diameter and two and three-quarter miles long, and distributed to different parts of the irrigation area. This process considered is necessary because to apply crude sewage was found often to choke the pores of the soil. The conduit has a fall of two feet per mile and extends from Saltley to Tyburn. The depth of the branch land drains is four feet four inches, laid thirty-three feet apart, and are composed of three or four inch agricultural drainage pipes. The sewagers distributed on the lands by means of surface camers. Members were struck with the small proportion of sewage in the furrows, thus forming a good opinion of the power of the soil. They had also an opportunity of noticing the luxuriance of the crop of turnips, mangold, grass and other crops. The sludge contains a considerable amount of road detritus and about 90 per cent. of water, it is run into a kind of well and pumped up by chain buckets into a wooden conduit from whence it is distributed by other *suitable* conduits on to the land. In a short time most of the water is evaporated and then the partially dry sludge is dug into the soil. It might be thought that such a process would choke the soil, but this is not the case, an area thus treated is soon again fit for irrigation. In 1885 forty acres were placed under sludge, as soon as these forty acres were dug in, a second forty acres were similarly treated and so on. The average quantity of sewage daily treated, twenty millions of gallons, about one-tenth or a little more of the London sewage, which might therefore be viewed as capable of being dealt with in the same way. At Birmingham stock is raised and four hundred gallons of milk produced daily. Average percentage of solids in the milk is 13 per cent. Total expense of the system is fifty-four thousand pounds a year, the income about twenty thousand. Part of the expense is in payment of interest and repayment of loans. Money loss on the farm of about twelve thousand pounds, but when the loan was paid off it was considered that the financial aspect would be much better, besides it was no small gain to get rid of the sewage.

The following is a summary of Sir H. Roscoe's report with regard to sewage disposal.

Another process viz: "The Amine Process" has been tried at Wimbledon I learn from my friend Dr. T. Orme Dudfrold, medical health officer of the immense and wealthy parish of St. Mary Abbot's, Kensington, on a fairly large, experimental scale. Lime was added to the sewage in large quantities mixed with herring brine in the proportion of three grains to the gallon, a good effluent apparently sterile was produced. It was believed by many however, that most of the effect produced was due to the large addition of lime and a somewhat general impression prevailed that the process could not be regarded as applicable to the case of the London sewage. The instructions issued by Dr. Dudfield to his sanitary inspectors in regard to sanitary arrangements of *registered houses* requiring them to see 1st. That all cisterns are periodically cleansed and properly covered; 2nd. That all waste pipes from sinks, cisterns, baths, etc., etc., be disconnected and empty themselves over, or preferably, near surface gratings and outside the house if practicable; 3rd. That the drains under all such gratings be efficiently trapped; 4th. That the paving of the yards be laid to a fall towards such gratings, with the joints of such paving grouted or pointed in Portland cement or other impervious material; 5th. That all drains be trapped from the sewer outside the wall of the house next the sewer; 6th. That all house drains are air tight; 7th. That all special soil pipes be air tight at the joint, and carried full diameter, above the roof at a safe distance from windows and chimney tops. In February, 1885, the vestry directed the medical health officer to see that the above instructions were observed in respect of all other houses wherein on examination sanitary improvements were found necessary. I may here mention that I found that an Act for the compulsory notification of infectious diseases, had become law in England on the 30th of October, 1889, providing for notification not only by the medical practitioner in attendance, but also by the head of the family. By this dual system it is main-

tained that it is equally the duty of the head of the family or other person responsible for the care of the patient to report the illness; the enforced notification therefore by the medical attendant cannot be objected to by the relatives and friends of the patient.

A penalty not exceeding forty shillings is incurred by default of every person who fails to give the required certificate of notice. A fee of half a crown is payable by the local authority *i.e.* vestry for each certificate duly sent to the medical health officer, by the medical attendant.

An objection of late years having been based on the fact that as the lymph is passed through the human system, it may become means of transmitting enthetic disease. A danger however which whilst by no means to be disregarded, appears to be slight in practice and almost unappreciable; for Dr. Buchanan, chairman of local government board, Whitehall, states that he cannot learn of communication of syphilis by vaccination actually effected once in a million of vaccinations. Nevertheless, to remove every impediment to full acceptance of vaccination, the local government board have made arrangements for affording to parents the option of having their children vaccinated with calf lymph at the public vaccination stations. The government at present only supply medical men with stock lymph from the calf to enable them to start a series of vaccinations. On the continent this calf lymph is most common and at Brussels where this system is carried to great perfection, regular supplies are forwarded to England in tubes and charged ivory points, procurable at a very moderate price. Stations, public and private, have been established in London, at which persons can be vaccinated direct from the calf. This direct vaccination is highly successful at the government stations, an average of 988 vesicles resulting from 1,000 insertions of calf lymph. This rate of success Dr. Buchanan remarks is nowise to be had when the lymph, human or animal, is used in any preserved condition. Preserved lymph is said to be attended with perfectly successful results in only 40 per cent. of the cases; it follows then that the protective influence of vaccination cannot be fully and universally obtained, excepting by the use of lymph taken direct from a vesicle whether human or animal.

In addition to the knowledge we possess of immunity from smallpox in the French and German armies since revaccination has been made imperative, we have the experience of its value in Holland. Between 1870 and 1873 there were 20,575 cases of death from smallpox. A stringent law was then enacted making vaccination compulsory with the resnlt that the smallpox mortality has since steadily diminished from year to year. During the present year only one death from this disease so far been reported in the whole of Holland.

That the method of deodorising the emanations from sewers at an annual cost of eleven or twelve pounds sterling for each station where it is applied, appear to be practically unsuccessful, and therefore might as well be discontinued. 2nd. That the best known method of dealing with sewer emanations is by admitting air freely into the sewers to oxidise and dilute the emanations, and by favoring the escape of foul air by free openings in the roads and by pipe ventilators carried above the houses.

On Wednesday, the 30th of July, with my son Dr. T. C. Covernton and a party of six Toronto relatives and friends, we left Liverpool Street Station for the Port of Harwich; from thence in the evening of that day went on board a large and handsomely-fitted up screw steamer for the city of Antwerp, reaching that celebrated city next morning, and after four hours of sight-seeing left by rail for Brussels. In the evening and until afternoon of the next day we were busily engaged in a hasty reconnaissance of public buildings, palaces and parks, then leaving for Cologne. Early next morning we went to the celebrated cathedral, and subsequently took passage in a fine large steamer for passage to Mayence, passing the University of Bonn, Drachenfells, Coblentz, Eirenbreitzen, numerous castles on both sides of river Bingen, and at nine p.m. found ourselves at the large garrison city of Manz. Next morning we went by rail to Frankfort, subsequently journeying on to Berlin, reaching this city at nine p.m. Arrived there, we found a committee of medical men at the station in waiting to receive all the members of the Congress, and to give information relative to quarters to be procured as regards hotels. They had all been filled days before,

but after long driving through the city found one a long distance from where all the meetings were to be held, in which we could find accommodation for the night. The next morning whilst some of our party were seeking apartments in the Unter der Linden Strasse, I with my son drove more than a mile from the hotel to the Chamber of Deputies where Bismarck so long presided, in the various spacious Chambers of which committes were to be found to give to the members a miscellaneous and numerous amount of pamphlets, books, invitations, etc. Books were presented to the members of the Berlin Congress by Dr. A. Bucholtz, under direction of Professor Virchou on the sanitary institutions, hospitals and sick asylums of the Germany Empire, account of climate, soil, water supply, baths, drainage, meat markets, vaccination stations, and generally of the sanitary administration and system of medical relief in Berlin Another work bearing the title of Deutsches Gesundheitswesen gives a full account of the public health administration throughout the German Empire; also a Medical Guide to Berlin, a copy of which I sent to a member of our Board, Dr. Macdonald. Also a beautifully got up and illustrated work bearing the title Festschrift were Dargebracht der Section Fur Geburtshulfe und Gynachologie, also an inundation of pamphlets "*De omnibus Rebus et quibusdam aliüs*"; many of which, as there is a limit of comprehensiveness even of a Gladstone bag, I was obliged to leave in my room in Unter der Linden Strasse. All, unfortunately, in the German language, not as at the Congress I attended in Geneva in 1882, with a translation in French for the aid of such members to whom German was an unknown tongue. Having placed this wealth of literature in the carriage in waiting, we drove to the Circus Rinze Karlstrasse, in which building, as large as the Albert Hall, Kensington, the opening of the Congress was to take place. A short distance from the entrance to this huge structure we met several of our Toronto confreres on the sidewalk or shady side of the street, who had a short time previously struggled out of the vast assemblage, computed at seven thousand, for a breath of pure air and a refreshing glass of such lager beer as is only to be procured in Germany. The short avenue leading to the principal entrance was decked with Venetian masts bearing wreaths and festoons, and two guilded tripods on lofty pedestals and an inscription, "*Universi Orbis Terrarum Medicos Salutamus.*" Having been warned by friends outside that some seven thousand persons filled the building and the heat and impure atmosphere was calculated to produce syncope we did not enter, but as possibly some members of our Board do not always see the *British Medical Journal*, I transcribe a few descriptive sentences, "As one entered the hall the scene was dazzling—daylight was quite shut out and the vast expanse of the amphitheatre was flooded with electric light; row upon row of ladies and gentlemen, many in evening dress, large numbers in uniform, a few in academic costume, rose close packed up to the roof. The arena, crimson carpeted, was filled with the accredited representatives of Governments, Universities, members of faculties and of diplomatic bodies—crosses and orders glittered, and everywhere the dainty golden badge of the Congress, a staff of Æsculapius, caught the light. Facing the chief entrance a vast drop scene representing the interior of the Baths of Caracalla as restored by the Government Architect Jaffe formed the back ground of the tribune. In front of the picture rose a golden throne whereon sat a colossal statute of Osculapius, by Westphal. The robes of the presiding deity gleamed white beneath the cunningly arranged electric beams, and his features wore an expression of Olympian calm and beningnancy. Beneath the throne an altar-like desk or pulpit gave the orator of the moment the look of a ministering priest. On the right the elevated orchestra was transformed into a shrine of Athena surrounded by winged Fames and Victories, and enclosing a stately figure of the Goddess, by Giustiani. On the opposite side the Imperial Box was adorned in a like manner, but the central object there was a bust of the Emperor. All around the circle stood antique statues and shields bearing the arms of the German Kingdoms and States, while from the roof hung gigantic banners of all the nations represented at the Congress. Dr. Virchow the President took his place and from the *Journal d'Hygiene* of 21st of August, published in Paris, I have availed myself of the opportunity of making the following translation of a portion of Professor Virchow's address on the sanitary arrangements of the city of Berlin, at the International Medical

Congress assembled in that city on the 4th of August, 1890: The Committee of medical men appointed for the section of hygiene conceived the happy idea of having prepared a jubilee paper in which would be found a description of all the sanitary institutions of that city, an assemblage of valuable documents particularly devoted to the source of water, of the conduit of the same to the city and of the disposal of the sewage. Thanks to the system adopted; the appearance, the cleanliness, and the salubrity of the city have undergone a very great change within the last twenty years, and notwithstanding the opposition and the objections of the prophets of evil at a period when they sprung up like mushrooms, the members of the municipality arrived at convictions to which they have remained uniformly faithful. They have expended one hundred and thirty-eight millions of marks for the construction of sewers, the carrying off of sewage and the purchase of land for absorption of the same. Thanks also to this intelligent procedure the city of Berlin, which to speak correctly has in no respect played the part of an innovator, may be considered as the only city in the world where this organization has been equally complete. The filtering fields, two in number, one in the north, the other in the south, have seven thousand six hundred and fourteen hectares of superficial measurement, and on the working of the same in the years 1888-89 they have brought in a revenue of two hundred and thirty-eight thousand marks, and the effluent has been indisputably pure; but notwithstanding that this purification is perfect, they have not directly supplied this effluent from the sewage to the people for household purposes, and it is necessary that the municipal authorities should exercise extreme vigilance over lands thus utilized. To this may be added another advantage for social order, as in these fields the city employs a large number of people sent to houses of correction, and has thus restored numerous vagabonds to honest and remunerative labor. From this as a consequence there is the possibility of transforming into convalescent homes certain buildings formerly occupied by prisoners."

"Excuse me, honored colleagues, if on this subject I have made a long digression; you have had in it the example of the persevering will of an independent municipality decided on advancing step by step in the work they engaged in of being on a level with the progress of sanitary science. I will not dwell on the disinterested work that the men devoted to this duty, equally with prominent physicians have accomplished. These men you will meet in the municipal building of the city council, where a grand reception awaits the members of the Congress, and from them you will learn that almost all these enterprises have been undertaken and brought to a satisfactory conclusion since the period when it was said that all the efforts of Germany were concentrated. towards a preparation for war. No, gentlemen, we are determined partizans of peace We know that peace vivifies, and that war kills. We desire to live in peace with the entire world in order that we may accomplish without trouble the work of humanity which is dependent on science.

Following Professor Virchow and many other eminent German, and other equally eminent men from England, France, Italy, Hungary and Russia, a pause ensued during which the immense building was nearly half emptied of members seeking fresh air and lower temperature. Not understanding the language, only spoken in the various sections in the Austellungs Park, that for three days we attended, I cannot venture any opinion of the high or medium order of merit of the few papers; only for a short time I was in the crowd of listeners, under more favourable circumstances than at the circus Kenz, for being held in the park a large number were enabled to place themselves in the open, where abundant fresh air was to be enjoyed. Relative to their merit I can only furnish you with the sententious reply of an eminent surgical knight who in reply to a question *ad hoc* that I proposed, informed me "That in the papers that he had heard there was a great deal that was true, but little that was new," and as the gentleman in question was an excellent German scholar I presume the opinion to have been founded on a thorough comprehension of the subject matter. Of members from different countries of Europe there was only one present that I knew at the Congress of Geneva in 1882, viz., Dr. Axel Key, from Stockholm; and at the Brighton meeting of the Medical Association in 1886, Dr. Billings, of Washington; of

medical cofreres from Toronto and Montreal a good many old friends. On the evening of the opening day there was a grand reception held in the Austellungs or Exhibition Park, where very fine musical entertainment—vocal and instrumental—in the numerous and grand rooms in the immense museum building in which refreshments of every kind were to be found, also the lovely grounds in which the museum is situated, all combined to make the entertainment one to be long remembered. This was the only reception I attended, but two of the younger members of our party were present at the reception of the members of the Congress in the town hall by the city of Berlin, the various rooms being magnificently decorated and splendidly illuminated; of the scenes witnessed there Drs. Allan Baines and O'Reilly are better fitted to give a description than I am only from hearsay. The ladies of our party attended two of the receptions given by the wives of eminent Berlin physicians, at which the warmth of reception and hospitality displayed were beyond praise. On every evening either sectional or private dinner parties were given to the members of the Congress, and on Thursday of the fourth day of the Congress, balls were given at the Central Hotel, Imperial Hotel, Keiserhoff Hotel, the Philharmonic and the Zoologisches Garten. From the *Medical Guide*, of Berlin, furnished to all the members, valuable information and much time in the work of sight-seeing; but to form anything approaching to an adequate idea of the numberless places of great interest would have required four or five weeks of residence instead of as many days. On the Wednesday I visited the Exhibition in connection with the Medical Congress, situated both in the Maschinen halle; but the chief part of the exhibits were to be found in a wing of the exhibition palace, all of the exhibits, numbering, I believe over a thousand, directly or indirectly connected with the various branches of our profession. The section set apart for hygiene and appliances connected therewith, both my son and myself spent fruitlessly a whole morning in attempting to discover the "*locus in quo*," but subsequently came across a programme entitled "Furden Internatiolen Medicineschen Congress," at page 62 of which I find "Abtheilung XV., Hygiene," but as to the constant enquiries by Germans, "Speichen se Deutsche," and our invariable answer "Nien," you can well understand that unless you have a good colloquial knowledge of the language a visit to Berlin as far as information on the various branches of medicine and surgery are concerned, can be viewed only as a pleasure trip, and that without such an intimate knowledge our young men may far better take a post-graduate course either at Johns Hopkin's University, Philadelphia, New York, Boston, or at Guy's, St. Thomas, London Uuiversity, Bartholomews, or Middlesex than travel as far afield as Germany.

From the Medical Guide book we learnt that the hospitals to be found in this very fine city are the Moabel, Fredericsham Military Hospitals, University Hospital and many other institutions for specialties to be found in a French translation of the Medical Guide for Berlin, a copy of which, as before noted, I mailed to Dr. Macdonald, and if my memory serves me, to our secretary; but our time did not permit of a visit to more than one, namely, the Hospital D'Urban which fine structure was only opened for patients a few weeks before the opening of the Congress. It is built on much the same principle as the Pavilion Hospital, of St. Thomas, on the Thames embankment; has 500 beds for adults, and ninety in a separate building for children, all the sections surrounded by beautifully kept grounds and flower parterres. Dr. Frankel, chief of the medical section, Dr. Korte, of the surgical, and four assistant physicians and surgeons on the staff of each of the two named professors. There were two pharmaceutists and nurses for all the wards.

On Thursday, the 7th of August, with Dr. Allan Baines and my son, we took a drive of over two miles to the part of the city where this hospital is, and were detained nearly half an hour before an official could be found who understood the only foreign language of which I had a colloquial knowledge. Shortly after the official, who could speak to us in French put in an appearance, we were joined by three French professors and thus aided we were able to obtain a fair insight into the various details of management. The wards were large, well ventilated, ample floor space, etc., etc., and for cooking arrangements for nurses and patients excellent. Amongst the most important establishments for preserving the inhabitants of Berlin from the danger resulting from use of

impure meat, cattle and sheep are only allowed to be slaughtered in the public abattoirs. The inspection of the slaughtered animals and of every kind of animal food which enters into public consumption is confided to the municipal direction, assigned to the curatorium of the abattoir. The inspection of meats is made under the direction of a first class veterinary surgeon in the macroscopic and microscopic sections. In the first section are engaged a certain number of assistant veterinarians, and in the second a larger number of inspectors—both men and women—of meats which have to undergo a special inspection, having been brought into the city by country butchers. This inspection is specially directed to stomach, throat and intestines. I append a translation kindly made for me by my friend Dr. Workman, by which you will perceive the eminent need for such inspection, and the paramount necessity for an equally searching one to be established without delay in our cities in Canada.

Having well realized the fact that without a thorough knowledge of the language as rapidly spoken, we left Berlin for a day's excursion to Charlottenberg and Potsdam, visiting at the latter town the grand palaces of Sans Souci erected by Frederick the Great after the thirty years war. The Orangery, an extensive edifice in the Italian style of architecture in which were to be found grand picture galleries and endless works of high art, subsequently the palace of Babelsberg generally occupied by the grandfather of the present Emperor, another immense palace, not on show the day we were there, and on the opposite side of the road immense barracks for all arms of the service—communication between the two by an underground tunnel. This palace we were informed by our guide was occupied generally by the present Emperor when at Potsdam; ordinary residence at a grand palace in Berlin. These numerous palaces with their grand parks, pleasure grounds, fountains and statuary by the most eminent sculptors, one traversed by an artificial lake, and through the grounds of another the river Havel, all combine to render the city the Versailles of Germany. On Friday we left Berlin at 8 in the morning, dined at Hanover, passing many towns and cities of renown chief among them the university city of Utrecht, and shortly before midnight reached the northern Venice, Rotterdam. Early in the morning we commenced viewing this city of canals and its numerous drawbridges, with a huge dyke or embankment running through the centre of the town, protecting the lower part from inundation during high tide. The greatest attraction, the boompges or quay, where a very large number of ocean steamers and sailing ships quit this port for all parts of the world; at noon left by rail for the Hague only a three-quarters of an hour run, and after a hasty view of this beautiful city paid a short visit to its grand watering place Schevengen, returning to Rotterdam in time for the night steamer to Harwich. Had time permitted, I should have endeavored to have procured the vital statistics of Rotterdam, for with its numerous canals, the water in color suggestive of the presence of a large amount of vegetable matter, and on each side houses of three and four stories in height all apparently occupied as residences, the atmosphere in circulation could hardly be favorable to health. I must say, however, that the appearance of the men, women and children would scarcely justify the conclusion that fevers, tuberculosis, anæmia or other complaints certainly not smallpox were more rife than in other cities visited on the continent. Over the house where Erasmus first saw the light there is placed a tablet bearing the following inscription, "*Hoc est parva domus magnus qua natus Erasmus.*" Reached London on the morning of the 10th, and following day I had an interview with the directors of the Electrotytic Sewage Company, the result of which is mentioned in a previous page.

All of which is respectfully submitted,

CHAS. WM. COVERNTON.

## REPORT OF COMMITTEE OF SCHOOL HYGIENE ON PHYSICAL CULTURE IN PROVINCIAL NORMAL, COUNTY MODEL, HIGH, PUBLIC AND SEPARATE SCHOOLS IN ONTARIO.

*To the Chairman and Members of the Provincial Board of Health of Ontario.*

GENTLEMEN,—In order to convey clear ideas on this subject, my report will contain selections from the regulations of the Education Department, which, among other things, prescribe physical culture in the training of teachers, and an authorized text-book for their instruction. It will also exhibit the nature of the response made by the schools to these regulations, and will contain such criticisms as naturally suggest themselves under both these heads. We shall thus be enabled to see what is being done in normal, training and model schools, wherein the teacher is prepared for his work, as well as in public and separate schools, wherein the pupils, upon whom he is to exercise his plastic power, are gathered together to be taught. Reference will also be made to the state of physical culture in the collegiate institutes and high schools of the Province.

Ever since their establishment in Toronto, in 1852, the teaching of physical culture in the normal and model schools has been prescribed and carefully attended to. The Education Department was fortunate in securing, at the start, the services of that enthusiastic teacher and accomplished gymnast, the late Colonel Goodwin. The present drill instructor, Sergeant Parr, is also highly spoken of as a painstaking and successful teacher in his department. Obliged, therefore, by the regulations of the normal school, to learn something of the gymnastic art, the teachers, more particularly the men, have introduced it among the children attending the public schools. It would not be reasonable to expect that these teachers could, in the course of a few sessions, be turned out masters of physical culture ; it is only fair to say, however, that their teaching has been, and is productive of good.

It is quite true, of course, that, in endeavoring to obtain the highest results from drill and gymnastics, personal ability in the teacher is of the first importance. It does not follow, however, that none but professional gymnasts should teach any part of the art. A teacher, whose heart is in his work, and who, therefore, must be a reformer of abuses and a lover of perfection, should feel pleasure in imparting grace to the movements of the bodies of his scholars as well as elegance to their speech, or swiftness to their powers of calculation. It is reasonable to believe, that, though he may be unable to instruct in the higher part of gymnastics, he may therefore do much good to his scholars by showing them how to walk gracefully, to salute properly, or to stand at ease without shuffling their feet or uneasily moving their hands to and fro.

The want of a cheap text-book on gymnastics, suitable for teachers, militated against the spread of instruction in that art. To remove the difficulty, the Education Department authorized the publication of such a book in 1885. This work, written by Mr. E. B. Houghton, an experienced teacher of gymnastics, is, as the title page indicates, a first book of exercises in drill, calisthenics and gymnastics, for the use of colleges, collegiate institutes, high schools, public, separate and private schools and gymnastic associations. In this work the squad drill is taken from the field exercise of the British army, without alterations or additions, except that the word "pupil" is substituted for that of "soldier." Marginal notes are given, and some changes are introduced necessary to its use in schools. As the author very properly says, "The field exercise having been for years in use, and having been revised from time to time by gentlemen in Her Majesty's service, by Her Majesty's command, must be as nearly perfect as possible." He proceeds to say, that, for the sake of classification, all the exercises in his book, except drill, that are performed without appliances, come under the head of calisthenics ; where appliances are used they come under the head of gymnastics. Under the head of calisthenics, apart from what is already taught as squad drill, are three sets of exercises, divided into several groups, suited to pupils of different ages. The exercises are regularly graded, so that pupils advance from those which are easy to the more difficult. Moreover, the skill of the master may be called into play, in devising exercises, which tend to develop particular groups of muscles, the movements of the body being graceful in outline and consequently pleasing to the spectator.

A critical examination of these calisthenic exercises will show anyone, that much may be done in physical culture without any apparatus at all. I might also remark at this point, without desiring to dwell on the subject, that in the Swedish system of gymnastics, which is now receiving considerable attention in Europe and America, leg movements, arch flexions, heaving movements, shoulder-blade movements, abdominal exercises, lateral trunk movements and respiratory exercises, are executed without the aid of apparatus. When, however, immovable apparatus is used, the simplest and least expensive, such as ropes, horizontal and parallel bars are sufficient.

Of movable apparatus, the Indian clubs and light dumb bells are the most useful. The Indian clubs furnish exercise for nearly every muscle of the upper arm, forearm and hand, and for the muscles which connect the upper extremity with the trunk. To illustrate: In raising the club to the second position, (physical culture, page 222), the club is first grasped by the right hand. This brings into play the flexor muscles of the fingers and the special flexors of the thumb and little finger. As the club is gradually raised from the side, with the arm in a slightly bent position, the supinator and other muscles on the outer side of the forearm, together with the biceps, are felt to contract. The arm is gradually raised by means of the deltoid, the great muscle of the shoulder. If the first exercise of the group (p. 224), be now practised, the initial downward movement will be performed by the contraction of the pectoralis major, the great chest muscle, and the latissimus dorsi, one of the large muscles of the back. The club is made to ascend towards the left, and to return to the second position, by the simultaneous contraction of the extensors of the wrist and thumb, the biceps (flexor of the forearm) and the anterior fibres of the deltoid muscles. If, while the club is held in the second position, exercise 10 of the group be gone through, the triceps, the great extensor muscle of the forearm, is brought into play, to check and prevent the too rapid downward fall of the club behind the back, and the movement is completed and the club brought back to the second position, by the contraction of the extensors of the wrist.

By appropriate movements, such as those in group five, the flexor and extensor muscles of the wrist are brought into use. The movements mentioned above may be done by either hand, and they may be combined, so as to form an endless number of graceful movements, and to bring into play the various muscles of both upper extremities.

Besides the muscles thus actively employed in swinging the clubs, the effort to preserve the equilibrium of the body while the clubs are in motion, brings into play the large muscles of the back and abdomen, which prevent the body from bending too far forwards, backwards or sideways, and the muscles on the front and back of hip, thigh and leg, which keep the pelvis erect on the thigh—the thigh on the leg, and the leg on the ankle.

The Indian clubs exercise principally the muscles of the upper extremity; those of the trunk and lower extremity are used in most of the exercises, principally in the effort to maintain the equilibrium of the body. Combined movements however may be employed to bring into simultaneous action the muscles of the upper extremity, together with those of the trunk and lower extremities.

The dumb-bells may be made even more useful than the clubs for the exercise of the various muscles of the body. For example: (See movements described on page 129, physical culture) the right foot is advanced, the body bent forward and a thrust made with the right hand upwards and then towards the ground while the body sways backwards and forwards, its whole weight being supported on one leg or the other, and the flexor and extensor muscles on the back and front of the leg and thigh are alternately contracted and relaxed. The dumb-bell is thrust upwards or downwards by the action of the triceps muscle, the great extensor of the forearm. The body is made to bend forwards, by the contraction of the muscles of the abdomen, and those which connect the walls of the abdomen and the pelvis with the thigh. While the body is in this positson the head is supported by means of the muscles of the back of the neck, and the trunk (principally the right side) by the strong muscles of the back and the gluteus maximus, which forms the prominence of the buttock. And so the left side may be exercised by advancing the left foot and going through the same movements with the left hand.

In the foregoing examples I have shown the action of certain groups of muscles during active exercise. If it were necessary, further examples showing the exercise of other groups of muscles might also be given. A perusal of Mr. Houghton's book, however, will convince any thoughtful reader that a regularly graded course of lessons such as the author recommends, is capable of developing all the muscles of the body.

We must conclude, therefore, that a very valuable text-book has been placed at the disposal of the teachers; but, at the same time, it must be unhesitatingly asserted that no untrained man or woman can take up Mr. Houghton's book, and after some perfunctory practice, undertake to instruct the pupils of the public schools in physical culture.

Having thus given you a slight idea of the character of the instruction in physical culture given in the authorized text book, I shall next proceed to quote the regulations of the Education Department, which prescribe physical culture as part of the course of studies in model, normal and training schools.

In county model schools, drill and calisthenics form part of the course of study, and every teacher in training is obliged to supply himself with the authorised text-book, "Houghton's Physical Culture." At the final examination, drill and calisthenics count for 50 marks. In this subject the board of examiners shall accept the results of an examination held by the Principal, or shall conduct a special examination as it may deem expedient.

Quoting from the last report of the Minister of Education, I find that "county model schools were first established in 1877, and since that time they have been attended by 15,362 teachers. The number of these schools in 1889 was 58, with 1,208 teachers in training, of whom 1,140 passed the final examination."

For normal schools, regulation 90 states that "the course of study and training shall include drill and calisthenics." Regulation 91 provides that "at the close of the term an examination in this subject shall be conducted by the Principal, unless otherwise ordered by the Minister of Education." Regulation 92 provides that "at the final examination, drill and calisthenics are allotted 50 marks." During the last twelve years there have been 4,677 students at the normal schools, of whom 442 attended in 1889.

In training institutes regulations providing for instruction and examination in this subject are also obligatory. There are now five training institutes in the Province, viz, one at Guelph, Hamilton, Kingston, Owen Sound, and Strathroy. The attendance in 1889 was 47, the number who wrote at the final examinations was 103, and the number who passed 83.

A consideration of the above statistics shows that in 1889 1,208 teachers received their training in county model schools, 103 in training institutes and 442 were registered as students in normal schools. While the course of study in the subject in question is in all these institutions apparently identical, yet there are certain noteworthy differences. Thus we find that Rule 70 relating to model schools states, "There shall be one session of fifteen weeks in each model school during the year, beginning on the first day of September." In a training institute the session begins on the second Monday of September, ending on the first Friday of December, a few days over thirteen weeks. In normal schools there are two sessions each year, the first opening on the third Tuesday in January and closing on the third Friday in June; the second opening on the third Tuesday in August and closing not later than the 22nd of December. Now, as the great majority of teachers receive their training at the county model schools, in which the session is only of fifteen weeks duration, it is not reasonable to suppose that they can be well trained in drill, etc., and consequently their capacity for teaching it cannot be very good. It would be well therefore under these circumstances, for the Education Department to consider the advisability of lengthening the sessions in model schools to six months. The same remark holds good for training institutes. The total number of teachers actually engaged in the public schools in 1888 was 7,273. Of these 37 per cent. were men and 63 per cent. women. It will readily be conceded that if drill, gymnastics and calisthenics are to be regularly and methodically taught in all public schools, there must be a reduction in the number of female teachers, and the surest way to effect this would be for the Education Department to insist on the proper teaching of this branch,

by teachers in the public schools. If female teachers, however, prove that they can teach drill with extension movements to the boys and calisthenics to the girls, while at the same time they are competent in the other branches of their profession, their sex should certainly offer no barrier to advancement, more particularly in the management of junior classes.

Having shown, therefore, that with the exceptions mentioned the efforts of the Education Department to secure trained teachers capable of giving instruction in drill and calisthenics have been wise and systematic, let us look to the schools and see what response has been obtained.

Under the heading "Drill and Calisthenics" the Regulations for Public Schools state: "The different extension movements prescribed in the authorised text book should be frequently practiced, not only during recess, but during school hours. In addition the boys should be formed into companies and taught the usual squad and company drill, and the girls should be exercised in calisthenics.

I shall now lay before you some statistics showing the number of students attending public and separate schools in Ontario, and also the percentages of those who receive instruction in drill and calisthenics in these schools:

In 1888, the last year of which we have a report, there were 464,200 pupils attending the public schools. They were divided in the matter of locality as follows:—

| | |
|---|---|
| In Counties | 353,357 |
| In Cities | 56,354 |
| In Towns | 54,489 |
| Total | 464,200 |

Pupils receiving instructions in drill and calisthenics:—

| | |
|---|---|
| In Counties | 118,695 |
| In Cities | 48,422 |
| In Towns | 33,226 |
| Total | 200,343 or 43 per cent. |

In order to obtain an exact idea of the relative percentages of pupils receiving instruction in drill and calisthenics in counties, cities and towns, I have made the necessary calculations, and I find that in counties 33.59 per cent. receive the required instruction, in cities 85.92 per cent., and in towns 60.79 per cent.

In the separate schools of Ontario during 1888 there were in attendance:—

| | |
|---|---|
| In Counties | 10,109 |
| In Cities | 13,707 |
| In Towns | 7,507 |
| Total | 31,323 |

Total number receiving instruction in drill and calisthenics, 16,901, or 50.39 per cent.
Pupils receiving instructions in drill and calisthenics:—

| | | |
|---|---|---|
| In Counties | 2,288 or | 22.63 per cent. |
| In Cities | 9,677 or | 70.59 " |
| In Towns | 4,936 or | 66.75 " |

These statistics could, of course, be elaborated still more, but that is unnecessary, my principal object being to show that in cities a good deal of attention is given to instruction in drill and calisthenics, the percentage for the public schools being 85.92, and that for the separate schools 70.09. In towns not so much, the percentages being for the public schools 60.97, for separate schools 75; whilst for counties the percentages

are very discouraging, being 33.59 for public schools and 22.63 for separate schools. The country child, it is true, is in most cases obliged to work, and his parents thinking that the cultivation of his muscles is sufficiently attended to in performing sundry chores about the house and farm, deem it wasteful to sanction the voting of public money in procuring gymnastic appliances for schools, but it should be remembered that gymnastics and calisthenics tend to make children more graceful in their movements, and also when begun early have a natural tendency to keep the muscles limber and pliant, and thus counteract the baneful effects of severe and exhansting toil, which in the case of children reared in the country, is begun at an early period of life. Moreover, a true training in gymnastics aims at developing the whole muscular system and not particular muscles.

The word "should" in the Departmental Regulations ought to be replaced by the word "shall," making physical culture imperative. Then all teachers engaged would be compelled to give the prescribed instruction, and it would be the duty of the inspectors to supervise the work and see that it was properly done.

A gymnasium ought to be put up on every school playground, so that drill, calisthenics and gymnastics may be taught irrespective of the season or the state of the weather. Where a regular gymnasium would cost too much a long covered shed may be utilised. Mr. Houghton says: "Good sheds may be converted into gymnasia by boarding them in and placing the windows as high as possible, and as many as are required in the sides of the building. The windows should be hung on pivots and ventilation and heating should be provided for. The flooring should be removed and about a foot and a half of sawdust or sand substituted; the dust should be kept down by sprinkling with water before being used in the morning, and, if required, at noon. The stationary apparatus indispensable consists of three pairs of ropes only, the point of suspension for such ropes to be as high as possible from the ground, but not more than sixteen feet, the ropes to hang about twenty inches apart and to be of three sizes, viz., one inch, one and one quarter inch, and one and a half inch. They must be of the best manilla, they must not be allowed to be knotted, and the ends should be finished with a crown knot. The movable appliances indispensable are light wooden dumb-bells and Indian clubs. The wooden dumb-bells should weigh from a half pound to one pound each, the Indian clubs from three quarters to two pounds each."

Certainly an inexpensive outfit, and one within the reach of the poorest schools.

Assuming by way of argument that teachers properly qualified to teach drill and calisthenics have been engaged and the simple apparatus mentioned above provided, is there any other obstacle in the way? I think there is, and a very great one. It is this: The course of study in the public schools embraces so many subjects that there is not sufficient time left for drill and calisthenics. Many of the subjects taught in the public schools savor strongly of a high school curriculm. Agriculture, elementary physics, botany, geometry, and algebra are not properly speaking subjects that should engage the attention of a public school teacher, and if they do, other more important subjects are necessarily neglected. The high schools of Ontario are generally recruited from the public schools, yet Inspector Seath deplores the bad records of the Ontario high schools in reading and writing. It follows, therefore, that these necessary portions of a public school education must be neglected, and it is a reasonable assumption that this result arises to a certain extent from the attention of pupil and teacher being divided among too many subjects. Pupils in public schools should be taught to read with distinct articulation, correct pronunciation and good expression; to spell ordinary words correctly, to write legibly and, if possible, beautifully, to do problems in arithmetic, and to know the history and geography of Canada. Book-keeping should be taught in the higher forms. Addresses upon temperance and hygiene should be given by the teachers. Singing and drawing should also be taught. Were the course of studies reduced, teachers being allowed to confine their energies to certain well recognized lines, could perfect themselves in teaching them and thus produce better results.

Again, every teacher has favorite subjects which he prefers to teach. If the teaching of specialties in public schools were recognized, where two or more teachers happen to be engaged in the same school or neighboring schools they might easily divide the curriculum between them, and among the other subjects physical culture would

receive a due attention from teachers having a special aptitude for it. Then again, a leading pupil who has a taste for physical culture could be made to assist a teacher very much. The teacher's health and vigor would also be improved. It follows, therefore, that by furthering physical culture in the schools of Ontario we will most certainly improve the status of the teacher, and the assumption is a natural one that if we help to improve the teacher we also supply a powerful lever to the educational status of the pupils of the schools of this Province.

I shall now proceed to lay before you the regulations prescribing the teaching of physical culture in the collegiate institutes and high schools of Ontario, together with the practical results which obtain at the present time. In the first place, the Education Department does not appear to have provided any training in physical culture for the masters of these schools. These gentlemen are frequently graduates of our Canadian universities. Moreover, regulation 58 describing the qualifications of head masters and assistants, states that: "Special teachers of drill, gymnastics and calisthentics must possess qualifications satisfactory to the Education Department." There is not, however, any regulation making it imperative that a specialist in physical culture shall be engaged by the trustees of high schools, and so for this and other reasons, which will appear further in this report, the work is much neglected. The regulations read as follows: "1. There shall be a play-ground and all other provision for physical exercise. 2. The course of students shall include drill, gymnastics and calisthenics. 3. Drill, gymnastics and calisthenics should be taught not less than an hour and a half a week in each division of Form 1, and not less than an hour a week in the other forms. Additional provision should also be made for practice by the pupils under efficient supervision." Then comes a clause which destroys the efficacy of the preceding rules: "In high schools which have no gymnasium gymastics is not obligatory, and drill and calisthenics should be taken up only when the weather permits." As will be seen further on, very few high schools have gymnasia, and consequently there is no training in gymnastics, and very little in drill and calisthenics, and these only in fine weather.

In the report of John Seath, B.A., inspector of the high schools and collegiate institutes of the western district of Ontario, we find that eighteen collegiate institutes in his district were provided with gymnasia. Some of these are evidently expensive, one at Parkdale, Toronto, having cost $4,000; a second, at Woodstock, $2,200; a third, at Galt, $1,600; a fourth, at Brantford, $1,000. The smallest sum, viz., $375, was expended on the Collingwood Collegiate Institute.

In twenty-four high schools with three or more masters there were only two gymnasia, one at Aylmer worth $600, and one at Mitchell, situated in the school building, value not stated. In eighteen high schools with two masters there was only one gymnasium. This notable exception was in the school building at Port Elgin.

As explanatory of the exact position of affairs he gives the following table:

| Physical Education. | Collegiate Institutes. | High schools with three or more masters. | High schools with two masters. | Summary. |
|---|---|---|---|---|
| Provision, sufficient | 4 | | | 4 |
| Provision, in part | 10 | 7 | 2 | 19 |
| Provision, none | 4 | 17 | 16 | 37 |

This table shows that in 37 of the 60 schools there is no systematic physical education, and that it is attended only in part in 19 of the remaining 23. Mr. Seath continues: "In a number of the schools football for the boys and tennis for the girls are favorite amusements, but the table and the regulations recognize only systematic training. Now that the collegiate institutes have gymnasia, and regulation 50 is explicit as to the

requirements, there will probably be an improvement, but so long as the July examinations are so vitally important to both teacher and pupil physical education will in many cases be subordinated to even the least important of the examination subjects.

J. E. Hodgson, M.A., inspector of collegiate institutes and high schools of the Eastern Division, reports that in 11 collegiate institutes the gymnasia ranged from fair to good, value not stated. In 26 three masters schools there was only one gymnasium, that at Morrisburg, valued at $300. In 18 two masters schools there was not one solitary gymnasium. In 18 two masters schools Mr. Hodgson reports that drill and calisthenics are not taught in 16, and the other two were not inspected. In 26 three masters schools the teaching in one was first-class, in another second class; not taught in 24 schools. Out of 11 collegiate institutes the teaching of drill and calisthenics was first class in 6, second class in 3, and 2 were not inspected.

Mr. Hodgson proceeds to remark: "It is to be regretted that little or no provision is made for the systematic physical training of pupils in the high schools. In the collegiate institutes, on the other hand, since this subject has been made obligatory as a part of the regular school work, excellent results are observable in the improved carriage and bearing of both boys and girls; so much so that the disapproval of placing this subject on the list of obligatory studies which existed in some of the boards, has changed to approval. There is, of course, a danger that the pupils may overdo their practice of gymnastics and thus receive injury instead of benefit therefrom. This danger, however, is obviated by the regulation which provides that the practice shall be under the supervision of one of the teachers, whose duty it is to see that the practice is wisely conducted."

Mr. Hodgson then adds: "But whilst it is true that in most of the high schools little or no provision is made for systematic physical training, it is also a fact that in most of them some out-door game such as cricket, lacrosse and baseball in the summer, and football in the spring and fall, is regularly played. Those games are, of course, healthful for the boys, and to some extent counteract the lack of the systematic training of the gymnasium, but the girls can take no part in them and are not supplied with any equivalent."

Inspector Hodgson's remark that "games such as cricket, lacrosse, etc., counteract to a certain extent the lack of systematic training" is one for which the trustees and masters of high schools ought to feel grateful. In reality it means little, as no provision is thus made for physical training during the six months of winter. Then lacrosse, football or cricket call for only 24 players, baseball for 18. Pupils, therefore, who are not engaged in the game are simply spectators, and often derive harm instead of benefit from lying about on the damp ground or exposed to the chill winds of spring or autumn, when, owing to their quiescent attidude, they are all the more subject to take cold. If the reasons for physical culture on which rule 50 of the regulations is framed are sound, it follows of necessity that systematic training for all pupils is intended and not a system regulated by whim, serviceable only to a few of the stronger pupils, and often objectionable on account of the serious bodily injuries resulting therefrom.

An American correspondent in London thus writes of the beauties of the English game: "Passing Kensington oval yesterday some of us were startled by the spectacle of a gentleman in athletic costume being gently borne on a stretcher to the nearest surgeons. Further progress in the Westminster direction brought us abreast of a mutilated man limping painfully along with the help of a couple of friends. Shortly after we were in turn overtaken by a vehicle conveying two seeming survivors from a field of carnage. One wore a bandage over the middle of his face, a blotch of red indicating the broken nose. The other had his right arm bound up and sat back with closed eyes, apparently in a half fainting condition. Enquiry ascertained that these persons had just emerged from the fierce delights of a football match, a discovery which caused the confusion of shame at our stupidity in not at once recognising the familiar outcome of the noble game."

The principal muscles developed in football are those of the legs, thigh and hips in running and kicking the ball; in the rushes the back muscles are considerably used, and the arms in pushing. The lungs are also exercised very much.

Baseball and cricket, it is true, are comparatively tame, but young ball players receive many injuries especially to the finger joints. I know of six or seven young men whose hands are deformed in the following manner; the base of one of the phalanges (finger bones) has been separated from its shaft, and owing to neglect union has never taken place, the knuckles being deformed for life. As ossification of these parts takes place from the eighteenth to the twentieth years, up to which time the union of the base and shaft is therefore cartilaginous, accidents of the kind mentioned must be very common. The pitcher, even when a trained athlete, suffers from the violent one-sided exercise of his right arm, even fracture of the humerus from violent muscular action in the twirling of the ball is recorded. There is also danger to the players from the hard ball, spikes, from falls, sliding to bases and otherwise. The development is also uneven. The legs are excessively while the arms are only slightly exercised. The principal muscles developed in baseball are those of the leg and thigh in running; in throwing, the muscles of the arm and shoulder; in catching, the flexor muscles of the hand and forearm; in batting, the flexors of one arm and the extensors of the other, and the flexors of both hands in grasping the bat; in stooping for the ball the abdomen slightly, the back and gluteal muscles considerably.

Cricket, England's national game, develops and leaves undevloped about the same muscles as baseball, except that there is less exercise in cricket.

In lacrosse there is more exercise than in either baseball or cricket. Both arms and legs are exercised, and pretty steadily. When played with activity it is a rough and dangerous game. Injuries more or less dangerous often occur. The principal muscles developed are those of the legs and thighs in running; when stooping for the ball the waist and back muscles, the flexors of the hand more particularly on the right side; the forearm very much; the upper arm and shoulders in throwing. It develops the lungs considerably, and when played actively causes profuse perspiration.

The principal muscles developed in lawn tennis are the running muscles. When stooping for the ball the waist and back muscles, the hand that uses the racket, the forearm much, the upper arm and shoulder slightly. It develops the lungs considerably.

It is not my intention to decry these games. Their disadvantages have been alluded to, but they have certain advantages, more particularly the great one that they are played in the open air. While their usefulness is recognised, however, they should not be allowed to supersede that careful training of the whole muscular system which can be most successfully obtained by a scientific physical culture, such as that contemplated in the regulations of the Education Department.

As a *resume* of the report, I desire to present to you the following conclusions:—

(1) The Education Department is to be congratulated upon having secured so excellent a text-book as "Houghton's Physical Culture."

(2) The departmental regulations providing for instruction and examination in drill, gymnastics and calisthenics at normal, model and training schools are exeellent.

(3) It is desirable to lengthen the term at model and training schools to six months, in order to give teachers in training an opportunity of perfectly mastering among other subjects physical culture.

(4) The number of subjects on the curriculum of public schools should be materially lessened, in order to give teachers an opportunity of devoting more time to essential subjects, and among others to physical culture, for their own benefit as well as that of their pupils.

(5) The number of studies on the curricula of collegiate institutes and high schools need not be lessened, but the length of time devoted to the course should be increased, so that proper time and attention may be given to all the branches, and among the others physical culture.

(6) Instruction in drill, gymnastics and calisthenics should be obligatory in all collegiate institutes, high, public and separate schools throughout the scholastic year. This will necessitate the erection of gymnasia or sheds of some simple form, and the presence of a teacher competent to give instruction.

(7) School inspectors should include in their reports special reference to the condition of physical culture in the schools.

All of which is respectfully submitted,

J. J. Cassidy.

---

## REPORT ON THE PROPOSED SYSTEM OF SEWERAGE AT BRANTFORD.

*To the Chairman and Members of the Provincial Board of Health.*

Gentlemen:—Your committee begs to report that they have carefully considered the report of the engineer on the prosposed scheme for sewering the city of Brantford and have great pleasure in recommending that the board approve of the scheme in its entirety. The report gives evidence of the most careful consideration of a number of difficult problems which exist in connection with the peculiar location of the city in the matter of levels, and we are glad to be able to say that the proposed scheme deals with them in the most satisfactorily manner. It is especially satisfactory to note how in the details of the plans for the disposal of the sewage, attention has been given to the provisions of the Public Health Act with respect to supplying means by which the pollution of the river, in this case the Grand, is to be prevented by means of a sewage farm of precipitation works, whenever the pollution of the river has caused a condition which might be prejudicial to the public health. Your committee while recognising the fact that the scheme permits and provides for the pouring of the effluent sewage into the river temporarily are of the opinion that for a short time after the opening of the works there will be caused no serious nuisance as it is always found that at first house holders are slow to construct house plumbing, and that therefore this pouring in of sewage may at first be allowed while the further measures for treating the sewage are in progress.

Trusting that the report may meet with the approval of the board your committee begs to respectfully submit it for adoption.

Peter H. Bryce.

Report adopted June 14th, 1890.

Francis Ray,
Chairman.

---

## THE FOLLOWING IS A SUPPLEMENTARY REPORT ON PROPOSED SYSTEM OF SEWERAGE AND SEWAGE DISPOSAL FOR THE CITY OF BRANTFORD.

*To the Mayor and Council of the City of Brantford:*

Gentlemen:—The objections which have been raised by the officials and authorities connected with the Mohawk Institute against the location of a "sewage farm" at the point shewn on the plan accompanying my report of 15th January, 1890, are in my opinion deserving of careful consideration.

The area marked "sewage farm" in this plan is briefly described in pages 13 and 14 of the report, and if the land could be purchased at the price of farm lands and no obstruction were thrown in the way by the authorities of the institute the location of the main outfall sewer and the sewage farm as there shewn and described would be the cheapest and best method of disposing of your sewage.

As however strong objections have been made to this location of the farm, and it has been found that probably the tenure of the land is such that it could not be expropriated

without serious legal complications arising, and that such action would probably arouse hostility, it appears desirable to select a sewage farm at a point more remote from the institute buildings.

On the 20th and 21st instant with your city engineer we examined the tract of land lying between the Grand river and the road leading from the Mohawk church to the locks.

Of this area we find that the southerly half is at such an elevation that the sewage can reach it by gravity without making any changes in grades or sizes of the main outfall sewer as originally proposed, but to avoid an inverted syphon across the valley of the Mohawk creek valley it will be necessary to make a diversion in the location of the main sewer from the line shewn on the original plan.

Instead of crossing the canal west of the starch works it will be necessary to continue the line along the north bank of the canal to a point nearly opposite the starch works, thence by the most economical line across the canal to the high ground to the east of the starch works, thence south-westerly to the Grand river at a point below the bathing pool east of the Mohawk church.

It will be seen from the plan that this new location of the main sewer is but little longer than the original line. The area of land available for a sewage farm is much greater than that in the Mohawk creek valley and as buildings are more distant the farm would not require the same degree of attention and care as if the farm originally proposed were used. The soil in the farm now proposed, while not so well adapted for filtration beds as the north part of the Mohawk creek valley, is very porous and quite well fitted for sewage farming. We have estimated that fully 100 acres can be utilised for a sewage farm between the Grand river and the road.

I have no hesitation in view of the objections raised against the original location to recommend that the sewage farm be located east of the road leading from the Mohawk church to the locks and that the line of the main sewer be altered, as described in this report.

In regard to the sewer on Brant avenue. I am of opinion that it would be conducive to the best interests of the city to make this sewer of sufficient size to admit the sewage from the Provincial Institute for the Blind, provided of course that the government will aid in the construction of the sewer or pay a fixed sum annually to the city for the privilege of allowing its sewage to enter the city's system.

Whatever arrangements are made in no case should any roof water or storm water be admitted with the sewage.

Respectfully submitted,

Willis Chipman.

Toronto, 24th June, 1890.

---

## REPORT ON THE CONDER SYSTEM OF TREATING SEWAGE AT THE ONTARIO INSTITUTE FOR THE DEAF AND DUMB, BELLEVILLE.

*To the Hon. the Minister of Agriculture* :

Your commissioners have to report that having visited the institution on September 16th, 1890, they, in company with Mr. Kivas Tully, of the Public Works Department, the superintendent and Major Mayne, who has charge of the Conder system, examined carefully into the process as it is in operation there, and found as follows :

1st. That a small tank 2 ft. x 1 ft. is placed in the closets of either wing at a point such that it can discharge the Conder solution, which consists of 4½ lb. of sulphate of iron daily or 9 lb. for the whole institution (being 1 lb. per month for each inmate), together with a small piece of meat (other organic matter as cheese may also be used), upon which water trickles, and when the apparatus is in use this solution is allowed to trickle into the soil pipe and thence goes to the sewer.

2nd. We are informed that the water is turned on and the solution used only in the evening, as the closets are but little used during the day.

3rd. Thence we visited the outside latrines and found them of such a size (25 feet by 2 feet 15 inches) and so constructed that they may be flushed several times if necessary during the day. They were well kept.

4th. The main sewer at the east of the building receives all the house slops, kitchen slops, etc., and at a point further south receives the sewage from the west wing, superintendent's house, etc. This sewer was examined and found in good working order, and discharging at the edge of the bay south of the institution about a quarter of a mile distant.

Regarding the usefulness of the precipitant as used the following facts were noted :

(*a*) That it is used only during the night when very little sewage leaves the building, and hence it is not applied to the great bulk of the sewage which leaves the latrines, the kitchen and the laundry, as at their ordinary rate of movement of two feet per second, the sewage would be in the bay in about ten minutes.

(*b*) That assuming for the moment the precipitant to be useful, its use in so partial a manner practically fails to do the work intended, viz, to disinfect and disintegrate the most important part of the sewage, viz, the excreta.

(*c*) That therefore the cost of the sulphate of iron poured into the sewers at night, amounting at three cents a pound to twenty-seven cents a day, or $98.55 annually, is practically valueless for the purposes intended.

As it is of importance to know the character of the so called Conder's method, your commissioners took samples of sewerage from (1) the latrines, (2) the sewer where receiving the house wastes, (3) at a point below the junction of the west branch with the main sewer, (4) at the outlet of the sewer in the bay.

A drop or two of each was added to gelatine tubes and left with the superintendent to observe results. In a few days all the tubes had undergone putrefaction, and to use the superintendent's words, "the contents of the tubes got so offensive that we removed them to a room upstairs." The tubes from which the gelatine tubes were inoculated were brought to Toronto, and they similarly had become in a few days, notably 1st and 2nd samples, extremely offensive.

A biological analysis of these samples has been carefully made, and the results showed that putrefactive decomposition set in. All the samples taken, whether from the latrines from the main sewer at the point where the kitchen drain enters, at that where the drain from the west building enters the main sewer, and also from the point where the sewage enters the bay.

As Major Mayne has stated to your commissioners what he claims for the Conder method of sewage disposal, it has appeared desirable that your commissioners should enquire more particularly into its merits. Major Mayne claims for the method :

1. That the sewage is not only displaced or clarified, but that it is also purified.

2. That it requires no special works for its application.

3. That it creates no sludge, and consequently only a small settling tank is required for the precipitant.

4. That it not only arrests decomposition, but also the evolution of sewer gas, and destro bacterial life.

5. That there is no smell below the part where it is applied.

Your commissioners have to say in reply to these claims, that if the method was considered to be in operation at the time of their visit, then, as would appear from the above experiments, the claims set forth are not maintained ; but if it be said that the method was not in operation, then there is indicated a very grave defect in the method of its application and in the manner in which it is carried out.

That the system is still believed in may, however, be seen from the paper read before the recent meeting of the Sanitary Institute of Great Britain, at Brighton, on August 25th, 1890. Major Conder there claimed for it in addition to the claims given above :

6. That the effluent may be discharged direct into any stream without any injury to the water.

7. That the silt is inoffensive, and has been shown to be a good manure.

He states the action to be that it takes hold of the urea, making the following chemical changes :

Allowing that the conversion of urea thus does take place, it would be absurd to say that the great bulk of sewage is made up of urea, or that sulphate of iron is capable of so extended a chemical action as to cause the great bulk of the organic matter of sewage to disappear in so simple a manner.

In the discussion which followed the reading of Major Conder's paper, Dr. Alfred Carpenter, Croyden, one of the most prominent and scientific medical health officers of Great Britain, is quoted in the report of the meeting in the "Sanitary Record" as follows: "Dr. Carpenter emphatically denied many of Major Conder's statements with regard to the pollution of the soil of sewage farms. The destruction of the material in human sewage is contrary, he said, to all political economy, and therefore he condemned these iron processes. Properly constructed sewers breed no sewer gas, and if the sewage is placed upon the land within say three hours of discharge no harm can befall. Under very special circumstances the use of sulphate of iron is proper, but over large areas it is mischievous."

Dr. Carpenter had used sulphate of iron in tanks, but had discontinued it on account of the expense.

Mr. Richard F. Grantham, Mem. Institute C. E. In another paper on the disposal of London sewage on Maplin Sands, referred to the various soils and their capacity for absorbing or filtering sewage, and spoke of "the strong consensus of opinion against any chemical treatment of sewage."

Without referring to the details of the use of iron salts for the purification of sewage, it may be said that they have been used for many years at different places with lime, alum, etc., and have all had the same object in view—of preventing rapid decomposition of the sewage, and of precipitating it either into tanks or in water courses. As I believe no person prior to Mr. Conder, has urged that the iron solution destroys or eats up the sewage ; and as he claims that his process notably lessens sewage, we must ask upon what argument the claim is based. Your commissioners have been informed by Major Mayne that the secret of the process is the presence of the organic matter in the solution, to prevent, as stated by him, the oxidization of the sulphate of iron before it is applied to the sewage. How this is accomplished where a portion of beef is placed in the solution, which, in so far as its juices contain albumen, is likely to be attacked by the iron as a precipitant, and so have its available activity for sewage lessened, your commissioners cannot understand, and until the matter is explained chemically, they must assume that ordinary sulphate of iron placed in the tanks would exert quite as much influence in precipitating sewage as does the sulphate solution plus a portion of fresh meat. In any case the conclusion of the whole matter seems to be that the sewage when the iron salt is being used is in part precipitated in its course to the bay, and that there it forms a black mass of sludge at the end of the pipe, the organic matter of which will undergo putrefaction, except such portions as may have become carbonate of iron, which make up but a small portion of the whole ; and that we have no evidence—in fact the contrary—that the bacteria of pathogenic disease if present in the sewage will not be carried out into the bay, and perhaps by their free multiplication in the bay water, affect the purity of the Belleville water supply. Abundant examples might be given showing that this is quite possible.

Your commissioners, in view of the failure of such a scheme as the Conder system to produce the desired result, have examined the ground with a view of seeing whether an alternative plan of disposing of the sewage of the institution on land might not be

adopted. There is an opportunity of having the sewage distributed from the existing main drain upon a sewage farm at a very small cost if the levels prove satisfactory. We were informed of a yet more desirable piece of land to the north of the institution, but until the levels are taken it was thought best not to go into any details regarding the preferable ground to be used.

The plan would involve the grading of an area of ground to a level, in the same way as at London. Not more than an acre of graded ground would probably be needed. Probably a certain amount of sub-soil tile drainage would be found necessary; but all the necessary work in addition to the preparation of the field would be an arrangement of tanks of such capacity as would store the sewage of at the most twenty-four hours, and having automatic flushing tanks to deliver the sewage into a system of sub-soil shallow tile drains intermittently for subsurface anyaline.

Trusting that this method may be found practicable by the Public Works Department.

We have the honor to be,
Your obedient servants,

PETER H. BRYCE,
Secretary Provincial Board.

P. CHRISTIE,
Inspector.

---

## REPORT OF SECRETARY *RE* FLOODING OF LAND ALONG SOUTH RIVER

TORONTO, July 7th, 1890.

*To the Chairman and Members of the Provincial Board of Health :*

GENTLEMEN,—In accordance with a request transmitted from Mr. R. Berford and others residing at South River, Parry Sound District, that the Board investigate the serious condition of affairs caused by the damming up of the river waters at South River Falls, I proceeded with the authority of the minister of the department to investigate the matter on Thursday, July 3rd. The following are the principal facts in connection with the matter :

The South River, taking its origin some fifty miles or more above South River Station, flows in a north-westerly direction until it expands into Couchi Lake, some six miles above the falls. Timber limits have been sold to various persons who have floated their logs and have boomed them more or less in this expansion of the river. From this point the river flows in a very winding channel, being about one and a half chains wide and from ten to twenty feet in depth till the fall of some eighty feet, in a series of smaller falls, is reached. Here the Northern railway crosses the stream on a bridge, while the village of South River lies south-westerly about a quarter of a mile. The banks along the stream were timbered with spruce, hemlock, black ash, etc., and were, I am informed, the most fertile lands of the district. Settlement began in the district some eight or nine years ago, and some seven years ago J. R. Booth, of Ottawa, bought the first timber limit of the district. In order to float his logs over the falls he constructed a slide at a point just west of the present railway bridge, which began at the level of the river above the falls. Stop-logs were put in at the edge of the falls some two and a half feet in height, giving enough of head to carry the timber down the slide. This raised the water in the river, but not to such an extent as to cause any notable flooding of the lands above, and there being few settlers above and no village at South River any evil effects of the dam were not noticed. Since the first building of the dam, however, other limits along the river above have been sold, and as usual, all sought to get their logs to the mill as soon as possible. This could be facilitated by broadening

the stream above, thereby causing it to overflow its banks, making thus a straighter course for the floating logs, and enabling the rivermen to boom the logs in a sort of small raft and haul a larger number down together in the broad current instead of the slower method of floating them down in the narrower and more meandering course of the river kept within its banks. This has been accomplished by raising the dam at the fall, the water at the time of my visiting being at least ten feet above the level of the falls, and seven or more above the level of Booth's first stop-logs. The result, as all might expect, has been to flood a tract of land along both banks of the river for six miles up, holding up the water even in Couchi Lake. The destruction of a large amount of valuable timber has been complete, and includes in some cases nearly one-half of the claims which have been taken up by different settlers. The following list contains the names of some of the principal sufferers :

— Erb, owns 100 acres; W. Holditch, 300; — Chapman, 200; J. Taylor, 100; — Nowale, 300; E. R. Hamilton, 175; — Burns, 25; R Berfoot, 300; P. Higgins, 100; D. Morrison, 200; Mr. Fluker, 200; W. Carphey, 100; J. Brennan, 400; P. Brennan, 200; R. H. Smith, 200; M. Foster, 200; P. McDiarmid, 200; P. Milne, 200; and others.

However disastrous this may be to the settlers, causing a loss to them of the most valuable of their claims—the bottom land—it is still more unfortunate for many of them, since it has brought the high waters almost to their doors, in some cases causing their cellars to be constantly wet. These evils are bad enough, but the really serious evil results when, in order to float logs down the slide they take out the stop-logs and lower the waters some six or eight feet. I was informed that up to a week ago, after the spring flooding, the flats had been left bare for a month or more, and as may well be supposed, the ground vegetation had begun to decay, and from over these miles of stagnant water and marsh, emanations were arising, resulting as they invariably have elsewhere, in malarial affections, which, if these operations are repeated, will reach their climax in the later summer months.

The drowned area at one point is over a mile in breadth, and for miles up the stream has reached many hundred yards. There are but two remedies for this state of affairs, neither of which can this season be perfectly successful.

The first is the holding of the waters at their present level. But, as will readily be seen, it is impossible to hold the present high water up during the dry months full to its present height, since evaporation will inveitably leave deposits along the shallow shores to dry out and produce evils of the same character as those already alluded to, only to a much less aggravated extent.

The second remedy is by permanently lowering the water by removing the dam. Of course, for a time the drowned lands would remain exposed, and if the waters are lowered in hot weather serious results may be anticipated. Since matters have progressed so far and the flats cannot be cultivated this year, I would recommend that the dams be not lowered until October or November.

I may now briefly summarise the whole case, and indicate its relations to the public health :

1st. When Booth first put up the slide and small dam, he adopted the easiest and most economical method, viz., by carrying the slide for its first hundred feet or more nearly on a level to a large mass of rock standing out in the river, thereby getting an easy support for the framework of his slide. Were a few yards of the rock blasted out the shoot might descend at once from the edge of the fall, and so remove wholly any necessity for a dam at this point.

2nd. It has been stated to me that there is another reason for holding up the water, which is that the head of water thus obtained enables them to float the logs more easily after they get past the falls, as there are here and there narrow places and other slight obstructions in the stream below. It has been, I think, very naturally remarked, that it would appear only proper and right that the persons benefited by floating the logs down should improve the river below, if it was necessary, rather than hold up water to the detriment of residents along the stream above.

3rd. The difficulties might with, I think, little expense, be thus removed, and a removal of them at present seems most desirable, since I am informed that Mr. Booth, having taken out most of the valuable timber from his limits, has sold all except one of 20,000 square miles, and is now willing to sell this for $17,000, since what is left will scarcely pay the trouble of floating down and hauling across his log railway, to be floated down the Ottawa.

4th. The balance of the timber is, I understand, being taken out by some local mills, one of which owned by Mr. Cooke, of Dashwood, is situated just above the falls on a bayou. About 1,500,000 feet are sawn annually by it. The operators at this mill have recently been acting with a more persistent disregard of the public good than any of the others, first for the simple convenience of getting their logs down stream with less trouble than if they kept them in the channel of the river, and next for the greater ease with which they can float the logs in the bayou to the foot of the skid, whence they are taken to the saw.

5th. A third miller, who saws about one million feet a year, informed me that while high water saved time and a few men's wages, there is no necessity whatever with a stream as deep as is South River for damming up its waters at all.

6th. There seems to be no evidence that any one has obtained a right to build this slide and dam. At present Mr. Booth owns these while another party owns the land whereon they are built. No one is aware that any of these recent operators who have increased the height of the dam have any rights whatever in the matter of holding up water.

*Recommendations.*

With these facts before us it does not appear difficult to find a remedy.

1st. Should it be found that any person or persons have a legal right to hold up the waters by the dam, and that land owners above, through non-intervention, have lost the right under the Canada statutes to protect themselves, then there seems no doubt that these persons become responsible under sec. 60 of the Public Health Act for any nuisance caused by virtue of their action or default.

2nd. Hence, under secs. 59 to 64 of the same Act measures may be taken for its abatement.

3rd. Action having been taken by the Provincial Board, with the sanction of the Minister, as provided in sec. 64, it becomes my duty to report, advising that the local board or some ratepayer "apply to the High Court for an order for the removal or abatement of the nuisance or unsanitary condition, and to restrict the proprietors of any such industry from carrying on the same until the said nuisance shall have been abated to the satisfaction of the Provincial Board of Health."

4th. I am of the opinion that should it be found that the owners of the mill-dam have acquired riparian rights, they cannot be protected from action under the clauses of the Health Act as above referred to, by virtue of clause 105 of the same Act.

I trust that action may be taken as speedily as possible under the powers indicated above, in order that these settlers may not, among their many other difficulties, have that of malarial and remittent fevers added—as must be the case under present conditions—during the season of the year when farming operations are most active.

Trusting that the report may recommend itself to your favorable consideration,

I have the honor to be,
Your obedient servant,

P. H. Bryce.

## REPORT OF THE COMMITTEE ON SEWERAGE AND WATER SUPPLY ON THE PUBLIC WATER SUPPLY OF ORILLIA.

*To the Chairman and Members of the Provincial Board of Health :*

GENTLEMEN,—Your committee appointed to investigate the question of the public water supply of Orillia begs leave to report as follows :—

Arriving in the town, we were courteously received by the mayor, Mr. Slavin, and by Mr. Robinson, the town engineer. On the morning of July 3rd we were conducted by them to the first point of interest, viz., the old asylum building, situated on lake Couchiching about a mile distant from the Narrows, connecting this lake with lake Simcoe. We were conducted by Mr. Muir, the bursar, in the absence of Dr. Beaton, the superintendent, to the various points of importance. We found that the water supply of the building is being pumped from lake Couchiching at about 72 feet from the shore, in line of the asylum grounds. We further found that the sewage is discharged from a first and second cesspool or settling basin, at a point 204 feet eastward from the inlet of the water pipe at a distance of 42 feet into the lake. The engineer stated that from the amount of water pumped daily, the amount of sewage leaving the building would be from 25,000 to 30,000 gallons. The cesspool is cleaned out twice yearly and contains 3 or 4 feet of solids.

This building contained 125 persons at the time of our visit, and from what was learned concerning the health of some of those engaged in teaching, your committee cannot believe the sanitary condition to be good, either in the matter of plumbing or water supply. The removal to the new building will be hailed with pleasure doubtless by both officers and inmates.

Your committee thence proceeded to the new asylum grounds and examined with great pleasure and satisfaction the source of the water supply, the storage water supply and the pumping appliances. Such a source, absolutely free from danger of contamination, enables the institution to dispose of its sewage with perfect impunity as regards itself, into lake Simcoe, about a mile from the Narrows connecting it with lake Couchiching, and at a point out some 300 feet into the lake.

It is unfortunate that the disposal of sewage has been made in this way in a new government building, since it is a direct violation of the letter and spirit of the Public Health Act. It is difficult for the board to exercise powers laid upon it in restraining towns and cities from disposing of their sewage in a way to pollute lakes and streams when the latter see the government offending against laws passed by itself. As it is quite probable that the growing town of Orillia may find it profitable at some time in the future to pump water for a public supply from lake Simcoe it is proper that your committee should bring before you as now being opportune another method of disposing of the sewage of the new asylum, already large in amount, and which will be greatly increased when the buildings are completed and fully occupied.

The soil about the institution is stony, with a sub-soil of gravel and sand in varying layers. The building occupies a beautiful site on rising ground some three hundred yards from the lake shore. What will be the grounds proper are situated to the south and east of the building and consist of some fifteen or twenty acres, which will doubtless be gradually brought into a fine state of cultivation and ornamentally laid out. The opportunity is now given, before the work of improvement is undertaken, to provide for the disposal of the sewage by placing at a point a few feet below the level of the main house sewer receiving tanks constructed of well laid masonry set in Portland cement of sufficient capacity to hold, say, the sewage of four hours when the use of water is greatest. Such tanks should be constructed in two main compartments. The first should have a strainer, and from the other division sewage should pass by a T pipe into compartment No. 2, from which it should be discharged by means of an automatic flush tank, by siphonage, into four inch field tiles laid twelve or eighteen inches below the surface, with wrapped joints, which should branch into smaller two inch pipes. The area of these pipes should be so calculated as to receive the contents of any flush tank. The sewage

freed from suspended solids by the settling tanks will rapidly pass out through the joints of the field tiles and descend into the gravelly soil with such energy as to always relieve the soil surrounding these tiles of the danger of saturation. Should the deeper soil at any part prove retentive it would be well to relieve it by some deeper sub-soil drains at a depth of four or five feet. Proper details of construction easily prepared will enable the sludge which will gradually accumulate in the tanks to be removed at intervals.

The ill smelling gases which will form to some extent through fermentation in the receiving tanks can be readily prevented from accumulating if adequate provision be made for the inlet of fresh air to take the place of the gases, which either pass up through soil pipes, which can be made to act as ventilators, or by artificial ventilation, into the smokestack of the engine room.

An acre will deal with the sewage of from 100 to 200 persons, according to the retentiveness of the land, and in the present instance the soil is peculiarly favorable to the rapid soakage of water. To indicate the capacity of a fairly permeable soil, it may be stated that a gravel soil will allow from fifty to seventy-five per cent. of the water falling upon it to pass through, its permanent retentiveness being represented by 30.25. In other words, an absolutely dry gravel and sand soil would retain from .5 to .25 of an inch in its interstices, supposing that an inch of water fell upon its surface.

Assuming that 500 inmates would each use 50 gallons per diem, there would be 25,000 gallons of sewage, which is equal to a little more than an inch of water falling upon each square inch of surface over an acre. As, however, the number of drains would be limited, and as some time is necessary for soakage even in a sandy soil, we may assume that with drains at from every 25 to 40 feet, as at Gennevilliers, an acre would easily deal with the sewage of 200 persons if necessary. However, as stated before, the available land is ample for every contingency, more land being utilized as found to be required, and your committee would recommend that they respectfully submit the committee's conclusions to the proper authority at the earliest convenient opportunity.

The manufacture of gas from crude petroleum and tamarack wood, by the McIlvaney process, is extremely interesting and worthy of remark. The battery manufactures 500 feet of gas per hour, the institution using from 1,200 to 1,300 cubic feet. The gasometer holds from 4,000 to 5,000 cubic feet.

Your committee next returned to the town, passing on the way a considerable stream with a mill thereon. This stream rising a mile or two above, supplies an amount of water, which, if properly taken, would be equal to the present necessities of the town. Keeping along the ridge we came to the present low, level reservoir, which is built of wood, and, we were told, holds a day or two's supply of water. No one could give us accurate data as to its capacity or the amount of water daily consumed. The top of the reservoir, as is also the case with the high-level reservoir, is made of logs, laid as close as convenient, and covered, to some extent, with gravel. Decay was everywhere apparent, and no regular aeration of the reservoir taking place, the water cannot for a moment be assumed to be in a good condition, although flowing from springs or artesian wells of unexampled purity.

The present supply seems to be mainly obtained from a boring seven inches in diameter down to a depth variously given at from 100 to 180 feet. The water rises high on the hill-side near the surface, and is conducted by a wooden pipe to the reservoir, whence a portion flows to the town, and another portion is pumped to the high-level reservoir. From statements made by Mr. Robinson, C.E., and by observations, appear to be, no doubt, that an impervious bed of clay, tolerably constant in its occurrence, and level, underlies the surface or superficial sands and gravels which form the water absorbing and carrying strata above the town. This being the case, your committee informed the gentlemen accompanying them that there seemed to be no doubt as to the purity of these artesian and spring supplies, and that could the question of quantity be settled, there could be no doubt, both from the standpoint of economy and purity, that a series of wells on the hill-side would fulfil every requirement in a high degree.

The question of supply seems capable of an approximate determination from the fact that the bored well which has been down for probably for ten years, is stated to give a steady uspply of 50 gallons per minute, or 70,000 gallons in 24 hours. Assuming that a population of 4,000 consume 50 gallons per diem, the maximum total to be reached for many years, 200,000 gallons per diem would be required. At this rate three wells of the above capacity would readily supply all the water required.

Your committee would therefore advise that wells be sunk on the terrace on which the pumping station is placed, where, in all probability, the water-layer reached in the above artesian well would be reached without the same depth of actual boring being necessary. It would be well to put them at some distance apart, so that each can have a large area of water to draw upon. If this prove successful, your committee would recommend that, in addition, provision be made so that by pumping and gravity the town may receive water for daily purposes; a standpipe to be erected of sufficient capacity, on the height above the new school building, as a reservoir for emergencies, as fire, etc., and for giving a steadier pressure in the mains, if found advisable.

There are, doubtless, other sources of supply for the town. Indeed it seems exceptionally well provided with first-class water, such as Lake Couchiching, Lake Simcoe, and any of the several creeks which were pointed out. But with the plant where it is, the limited expenditure necessary for obtaining the supply, and the certainty of its absolute purity from the sanitary standpoint, your committee unhesitatingly recommends that the borings be made and tested before any other source of supply is utilized.

With regard to creeks as a supply, it is doubtless true that they can be made safe sources of supply, but this can be done only with difficulty, as they must be taken near their source in springs, the nearer the safer, as you then realize more nearly the condition of an underground water. This often means an expensive line of mains, with the necessary pumping well, etc. If not taken near the source, the contamination from swamps, manured lands, cattle and refuse of all kinds, is, more or less, inevitable. And further, the water if not taken close to its source is very subject to the effects of evaporation during the warm months, while at the same time the high temperature makes a ready culture medium for any bacteria gaining entrance thereto. Some of these difficulties are likewise liable to occur with the use of lake water, illustrations of which have been already set forth in this paper in connection with the asylums.

Another matter to be reported on is in connection with the cesspool which has been constructed at the new high school. Your committee would recommend that the local board at once order that this will not be used, but that in lieu thereof, a brick vault, lined with cement, be constructed, and that it be kept deodorized by sawdust, gypsum, ashes or dry earth being daily added to it by the janitor. Should fluids accumulate, which is not probable, a force pump and barrel on wheels can quickly remove the surplus water. It would be well to so construct the vault that ready access may be had to it, so that its solid contents can periodically be removed.

It is well in concluding, to direct the attention of the council and local board to the necessity of constructing, at an early day, a main and some lateral sewers of a small size, for the use of the central thickly populated portions of the town. It may be stated that such could be built at from $5,000 to $10,000 per mile, according to size. And, further, it must not be overlooked that the purchase of such a convenient location as the old asylum grounds for disposing of the sewage in a manner similar to that at the new asylum, ought to be made at the earliest convenient opportunity.

All of which is respectfully submitted.

PETER H. BRYCE.
J. W. MACDONALD.

## REPORT *RE* BEAVERTON MILL-DAM NUISANCE.

Gentlemen.—Your secretary, on petition of the Local Board of Health, of Beaverton, visited the town and examined the reported causes of the prevalence of typhoid fever. It was found that when the mill-dam on the Beaver river is up it raises the water so that that in neighboring wells is similarly raised, and again, when the dam is lowered the water in the river is similarly lowered. As the river is the receptacle of most of the drainage of the town, having also privies and stable yards along its banks, and two cemeteries situated on the bank at the upper end of the town, it is reasonable to assume that the river pollution may affect the purity of the well water through the permeable gravel bed, forming the super-saturated layer in which the well water is found. In order to test this interesting point of relationship, I propose to have a series of experiments made to find whether the river water and that of the pond contain a similar number of bacteria and of similar speeies.

I had a long consultation with the local board and the mill owner complained of as lowering and raising the water. I pointed out the liability of the latter to a penalty for creating a nuisance, and indicated the necessity for maintaining the pond water at uniform level, or doing away with the mill dam entirely.

The situation of the town on Lake Simcoe makes the latter a convenient source for public water supply; but a much cheaper method of supplying good water, it is hoped, will be found by collecting the underground supply by a gallery sunk down to the super-saturated layer as it flows from the higher ground to the lower, there being a higher ground of limestone rock, with drift gravel lying along its base, and dipping under the town.

I urged the necessity for a public water supply, owing to the situation of the town, and the desirability of retaining the sheet of water for ornamental purposes, if it can be maintained at a given level free from animal contamination.

I trust that a solution of this serious menace to the public health may soon be found by the citizens.

I have the honor to be,
Your obedient servant,

Peter H. Bryce,
Secretary.

---

## REPORT ON THE OUTBREAK OF DIPHTHERIA AT KINGSTON ASYLUM IN THE HOUSE OF THE ASYLUM BY THE SECRETARY.

*To the Hon. J. Dryden, Minister of Agriculture :—*

Dear Sir,—Having been notified of the existence of diphtheria in an extended outbreak at the asylum by the inspector, R. Christie, Esq., I proceeded there in accordance with the 9th clause of the Act, on Thursday, 13th of November.

To my regret I learned that the eldest boy of the superintendent was ill (having been attacked five days previously) with diphtheria, which had developed an unusual malignity, causing his life to be despaired of. A younger boy had developed the disease the night previous, and during Friday the disease appeared in the nurse of the children, a healthy young woman.

This made the list of those who have been sick eight in all, including, with the exception of the cook, every member of the superintendent's household, as Mrs. Clarke had a severe attack, while Dr. Clarke suffered from the disease in a mild way. These cases began in September, and have included the five children, Dr. Clarke and Mrs. Clarke and the nurse.

The persistency of the presence of the poison in the house for over two months, associated with the fact that at that time no case of diphtheria, as far as could be learned, existed in Kingston or Portsmouth, and certainly none on the Asylum premises, has caused suspicion to be directed in the most positive manner to the sanitary condition of

the residence of the superintendent, which is an old but very well built mansion of some fifty years, with a basement, the space for which has in fact been made by blasting out the limestone rock.

Suspicion has been attached to the house in this instance inasmuch as a history of filth diseases has attached to it for the last fifteen years, as the following imperfect summary will show.

History of Superintendent's Residence, Rockwood Asylum.

1887. { Miss Dickson.
{ Miss Emily Dickson had typhoid fever in the spring.
{ Mr. Dickson.
{ Messenger Lanigan had typhoid in the autumn.
1.—1880. Mrs. Metcalfe died of puerperal fever.
2.—1881. Miss Bustin had typhoid fever.
3.—1882. Miss Clarke had typhoid just after going home in the early spring.
4.—1883.
5.—1884.
6.—1885.
7.—1886. Miss Gibson, a visitor, had typhoid in the house in the winter.
Miss Holland had typhoid just after going home.
Harold Clarke, 1 year old, had typhoid.
Harold's nurse, a young woman, had typhoid about the same time
8.—1887.
9.—1888.
10.—1889. Charlie Clarke had severe typhoid in September.
11.—1890. In February 6 cases of scarlatina, some very severe. In September diphtheria developed seven in all up to date. No other cases in Kingston at the time of its occurrence.

All visitors have had in fall and spring persistent diarrhœa.

Inasmuch as it may be taken for granted that in all old houses the primitive drains of past years have become decayed and clogged up, an investigation was instituted and was made as complete as the time at my disposal permitted of.

The old house-drain had been made of stone slabs without cement joints. Some ten years ago it was in part replaced (some 50 feet) by a 6 inch tile sewer badly laid, as at one point the fall is toward the house instead of away from it.

This drain was doing a fair amount of work on being opened, and received an iron pipe from the house closet, the sink pipe (which inside of the house is trapped but not ventilated) and a water pipe. The soil pipe from the closet leads to this by an iron pipe under the joists of the kitchen floor. It seemed, however, to be doing its work, but leaks may exist in the soil pipe which must be sought carefully by the water test. Dr. Clarke has had the closet and tank in water closet overhauled, it having been found to have a defective ventilating pipe.

An iron "Y" 4 inch pipe leading from drain at the corner of the house, intended for cleaning purposes, was found open, delivering gas immediately near the cellar window, and a side entrance way to the house.

The basement floors in different compartments consist of a wooden floor in the kitchen and servants' sitting room, of a broken plaster floor in the furnace room, an old wooden floor in servants' bed room, and a partial brick floor in a store cellar, also an old broken floor in work room.

The rain water leaders run in several directions some 30 to 50 feet from the building and there end, the stratified rock being entrusted with the disposal of this water.

At the rear of the building is an old wooden kitchen and various wooden sheds, occupying a space within rock excavation, which gives an uneven rock floor to the yard, which has polluted earth lying in its irregularities.

In view of these numerous possible causes of trouble, and especially in view of the fact of the persistency of infection in the house, there seems to be no alternative but to overhaul completely the whole flooring of the basement and the drainage, and remove organic decay of every form, discover old and hidden drains and introduce a modern, simplified system of plumbing and sewerage.

To this end I would recommend :—

1. That all the old flooring, of whatever sort, with wooden joists, sheeting and partitions which may be partially decayed and retaining infection, be swept entirely out of

the basement, together with all refuse lying on top of bed rock, and remnants of all drains, whether wooden, tile or iron.

2. Replace the same by a good concrete floor, finished with Trinidad asphalt on top to give it a smooth surface. Plaster the outer foundation walls, or better, put tar paper against the stone foundation with thin strips of wood two inches wide, and tack to this wire mesh lathing, and plaster on this. The point is to have no materials in damp confined spaces where decay is possible. Partition walls may be constructed in the ordinary way, but better, be made of brick and plastered.

3. Rearrange the cellar rooms so as to have a new east window, and a deeper north window opening into the kitchen (*i.e.*, take away present servants' sitting room). Cut down windows in the larder, and especially in the servants' bedroom, making them of good size for light and air.

4. Have no storage of vegetables or roots of any kind in this basement.

5. Outside the foundation remove all earth to a width of three feet from the foundation, and make a concrete bottom on a level lower than that of inside floor, and having a dip toward the south-east corner and concave so that it will act as a water carrier if the area be left.

6. The outer side of this area must be a good wall made of stone or brick, set in water-lime or Thorold cement. The area would thus, if covered with an iron or wooden grating, allow air to move freely around the foundation.

7. If it is thought more economical the same object can be obtained by coating the outer side of the foundation with a thick layer of Portland cement from top to bottom, and on the bottom concrete, external to the foundation, say a 5 inch field tile with joints protected against dirt, for catching ground water.

8. All rain water pipes will best be dealt with by carrying them along the outside of the foundation by a 4 inch glazed tile with good fall, laid below frost line and led to manhole in the manner hereafter described.

9. Remove all old sheds and wooden buildings from east of the residence and give the yard, after cleaning, a coating of good lake gravel, made into cement with one part Portland to two parts sand and three parts gravel. Lay so that the grade will be well away from the residence to the south-east.

10. The existing soil pipes must be tested by water pressure, and if defective, replaced by new heavy iron soil pipe leading up through the roof to a good height, with mouth left open. The cistern in both bathroom and the closet must be trapped and ventilated. The soil pipe must be continued of iron across the east wall of the cellar kitchen under the door-sill level, with a fall of 1 foot in 50, with hand hole with screw for inspection and cleaning near the foot of the soil pipe, midway, and outside at the corner of the house. A new kitchen sink with slate wash tubs must be placed near where the present sink is, and have modern traps and ventilators of lead pipe with properly wiped joints and well gasketted and run lead joints into the socket of iron drain pipe.

11. Both for this and the outside area and water pipe drain it will be necessary to lower the level of the present drain by 16 inches at proposed manhole at the corner of the house, with a fall 1 foot in 80 after leaving manhole.

12. In order that at any moment the drains may be inspected, it is necessary to have at the south-east corner of the house, at a line with the south wall, a square manhole 30 inches square, built from top to bottom of brick laid in cement, with its bottom in cement guttered to the area of a 6 inch tile cut in half. Into this will be led the iron soil pipe drain with its bottom set in the cement on a level 3 inches above bottom of cement gutter, also the concave of the bottom or area around the house, or the field tile used in its stead; also the rain water leaders from around the whole house.

13. The soil pipe and house drain must have no trap except on the fixtures (*i.e.*, the bath, basin, water closet, sink and wash tub). On the 6 inch glazed tile drain immedi

ately on its leaving the manhole will be placed a trap of proper modern approved depth of Scotch tile, so near manhole that at any moment it can be reached for cleaning. On the tile succeeding the trap, or in the same tile in which the trap is (whichever can be obtained), have a 4 inch iron ventilating pipe leading up at an angle so that at any moment a flush could be turned into it. Carry this over to the corner of the house, south-east, and carry up three feet above eaves. A sketch is given to show this. At top of manhole draw back half a brick all round for light fitting top made of tongued and grooved inch stuff crossed and doubled. If thought desirable a 4 inch goose neck can be let through the cover to supply fresh air to manhole, or better, be brought in through the side of the brick wall. In practice this would, however, in all probability, be found unnecessary.

14. As the air of the whole house would seem to be infected, it will be necessary to wash down all walls and ceilings with a disinfectant solution, and re-paper and paint the whole.

While the whole work will doubtless cost considerable, yet as most of the labor and materials are on the ground, it need not be excessive, and it will be greatly cheaper than a new structure, which would be the only apparent alternative.

I have the honor to be,
Your obedient servant,

PETER H. BRYCE,
Secretary.

# APPENDIX

CONTAINING THE

# ANNUAL REPORTS OF LOCAL BOARDS

IN THE VARIOUS

## MUNICIPALITIES OF ONTARIO.

# ANNUAL REPORTS OF LOCAL BOARDS OF HEALTH.

## CITIES.

### Belleville.

*Medical Health Officer's Report.*

I had the usual notices for cleaning up the city issued in the spring, and the Inspector then made a house to house inspection.

The slaughter-houses were regularly visited and inspected by the Inspector. Butcher shops, yards, lanes and public school grounds and premises were regularly looked after, and everything done by him to keep these places in a good sanitary state. I may say that he has devoted his whole time to the work and would strongly urge that he be further recompensed; his duties are arduous and at times disagreeable, but he does his duty without fear, favor or partiality.

During the year just closed the following infectious and contagious diseases have been reported to me as Medical Health Officer:—Diphtheria—December, 19; January, 24; February, 2; June, 1; August, 1; October, 3; a total of fifty cases, of which 8 died, all young children, of diphtheritic croup. I have had the following number of cases of measles reported to me during the months of April and May—290, with some four deaths of a bronchial character, the result of exposure before thorough recovery. I have had 3 cases of scarlet fever reported which, in my opinion, were cases in which the disease was contracted in other places. One from Trenton and two others brought the disease from Montreal. They all got better. I took all precautions to prevent its spreading. The cases were of a mild type. I have had reported to me for the year also the following number of cases of typhoid fever—with a low rate of mortality—only two deaths: February, 8 cases; September, 18 cases; October, 8 cases and November 3 cases. I may say that the cases in September were, in my opinion, contracted in Brockville, being principally confined to men from that district on the G. T. R. R.

During December and January we had an outbreak of diphtheria which was more of a catarrhal character, and owing to its being amongst the poorer class of people—where neither proper nursing or care could be taken of them, and to prevent its spreading I had the west wing of the hospital, which is completely isolated from the main building, fitted up to receive such patients, but owing to the prompt action taken in completely isolating the cases and thoroughly fumigating the several dwellings in which cases occurred, and the assistance given by the medical men of the city, the disease was soon stamped out and we had no necessity to use the hospital. I may say that the Inspector gave me great assistance in this matter, and promptly notified me of any fresh cases, and carried out my orders in the way of disinfecting the several dwellings, and in a great many instances did the work himself. During February we had an outbreak of measles of mild type which almost closed the schools. Prompt notice was given to the teachers not to allow any of the children to come to school from houses infected. The general public look on measles as a necessary disease of childhood, and I am forced to say that although all precautions were taken the disease exhausted itself for want of subjects. In January we had that stranger the Russian influenza, and although very few escaped an attack only three deaths could be traced directly to it, they being from congestion of the lungs arising

from exposure before thoroughly recovering from the disease.

I may say that the drainage of the city is not what it should be, but trust that a system of drainage will soon be established.

I have visited the Deaf and Dumb Institute and still find that the sewage of that institution still empties into the Bay of Quinte. I may say for the last three years I have repeatedly drawn the attention of the Provincial Board of Health to this question, and warned them that should our water supply become contaminated and sickness and loss of life occur from the contamination of our water from animal matter, and the only source of disease, or contamination being from the sewage of that institution, which empties into the bay about half a mile to the west of the point of intake, also the currents and prevalent winds being from the west, the city will hold the Government responsible. It does seem a great wrong that some action has not been taken before this to remove this danger after the repeated warnings and requests made both by myself and the city council. During the year just closed we have had 194 deaths; 137 buried in the Protestant cemetery and fifty-seven buried in the Roman Catholic cemetery. The mortality is higher than usual, accounted for in my opinion by the after effects of the epidemic of influenza, a great number of the deaths being amongst the aged and infirm. Also a larger number of phthisical subjects dying, they being less able to stand against this disease owing to the weak and exhausted state they were left in from the influenza. During the year complaints were made against some wells. I had the water examined and the wells cleaned out, and closed up those that were dangerous. I would again urge the city council to appoint one or two scavengers, also to proceed as soon as possible with the drainage of the city. Our natural advantages are great, and with a proper system of drainage Belleville would soon be the healthiest city in Ontario.

R. TRACY, M.D.,
Medical Health Officer.

---

## Brantford.

### *Medical Health Officer's Report.*

I have the honor to present the following report on sanitary matters in Brantford for the twelve months extending from November 1st, 1889, to October 31st, 1890.

The number of deaths in the city during year was 205, giving the low general death-rate of 14.35 per thousand in a population of 14,280.

The rate in Toronto for the same period was 15.63, for Hamilton 19, and for the twenty-nine Canadian cities and towns furnishing mortuary reports the average death-rate was 18.90.

The number of deaths from zymotic diseases in Brantford for the four years from 1887 to 1890, was as follows :—

| | 1890. | 1889. | 1888. | 1887. |
|---|---|---|---|---|
| Typhoid fever | 11 | 9 | 13 | 8 |
| Dyphtheria | 6 | 13 | 10 | 19 |
| Scarlet fever | .. | 1 | .. | 2 |
| Measles | 1 | 1 | 1 | .. |
| Whooping cough | 1 | 4 | 5 | 1 |
| Cholera infantum, etc | 10 | 18 | 26 | 23 |

The number of deaths from consumption in Brantford during the year was 22.

*Typhoid Fever.*—During the year 88 cases of typhoid fever were reported, and the number of fatal cases, as above stated, was 11.

Although the general death-rate of Brantford was only 14.35, the typhoid death-rate continued high, having been at the rate of 77 for a population of 100,000, while the death-rate in Toronto 55, in Hamilton 49, the average rate in ten Ontario cities 44, and the average rate in 29 Canadian cities, 48.

These rates are much above those in some of the great American cities, for instance, New York, 25 ; Brooklyn, 20 ; Buffalo, 24 ; New Orleans, 25 ; Boston, 37.

A few large American cities have, however, shewn a very high typhoid rate, namely Philadelphia, 70 ; Cincinnati, 64 ; Chicago, 90, and Pittsburg, 119.

Of these last Philadelphia, Cincinnati and Pittsburg are notorious for their extremely bad water supplies.

It will thus be seen that in her typhoid death-rate, Brantford unfortunately keeps well-abreast of those cities whose record in this disease is unsatisfactory.

It cannot be doubted that the introduction of our system of sewerage will materially help to lessen the amount of this disease, but I am confident it will never be reduced to the low rate which has been secured in so many cities until the use of well water is generally abandoned. Owing to the extremely porous sub-soil underlying the whole city, the wells derive their supply from a radius of hundreds of feet, and are thus liable to be, and a large proportion are certain to be more or less contaminated by the soakage from a polluted soil, possibly by the deadly dejections from some typhoid fever patient. A striking illustration of free transmission through the soil is found in the fact that a leakage in the gas pipes has in a number of instances, led to the escape of gas into the wells and cellars at long distances.

*Diphtheria, Scarlet Fever, etc.*—The number of cases of diphtheria reported during the past year was fifty-two, of which only six cases were fatal. This was less than half the number of several previous years as will be seen by the table above given.

The value of isolation and disinfection in this disease was well illustrated in an outbreak in West Brantford early in the year. A fatal case of diphtheria occurred in the village of Norwich. After the funeral the family hurriedly removed to Brantford bringing the infected bedding and clothing of deceased into the family of a relative. The mother of the deceased child slept with her married sister on the night of her arrival. The sister contracted the disease and died, and several neighbors and relatives took the disease.

In this case immediate notification by the physician in attendance followed by prompt and efficient isolation and disinfection undoubtedly arrested a dangerous outbreak.

There were twenty-one cases of scarlet fever reported at the health office during the year, but there were no fatal cases. Of measles, forty-two cases were reported, only one being fatal and of whooping cough there was only one fatal case.

*Infectious Diseases in the Public Schools.*—Diphtheria, scarlet fever and measles occur chiefly among children of school age, and are mainly spread by means of the schools. I attribute the diminished amount of these diseases in Brantford largely to prompt notification and investigation of all suspicious cases in families having children attending school and rigid exclusion of all such from school.

I have personally visited all the schools and impressed upon the teachers the importance of great watchfulness in this regard, and I am pleased to express my thanks to them for their co-operation.

*Hospital Accommodation for Infectious Diseases.*—By a regulation of the John H. Stratford Hospital cases of scarlet fever, diphtheria and measles are excluded.

There is an urgent need of provision for such cases, especially when occurring in small and crowded dwellings and in boarding houses and hotels. It is urgently needed for cases of domestic servants. It is dangerous for their employers to keep them and nurse them and they are usually unable to do so even if willing. Many of these girls have no home in the city, and if they have it is inhuman to send them home with infectious disease into crowded families of children.

One case in my own practice will illustrate this. I saw a servant girl in a small room adjoining a little bath room with closet connected with an unventilated cesspool. The girl had diphtheria. Both rooms were reeking with offensive odors. The closet connection was at once cut off, and the rooms ventilated. It was directed that she be kept there isolated from the rest of the house. On my departure, however, a cab was sent for

and the girl immediately sent home, where her parents and several children occupied a living room with two small bed-rooms. The girl recovered, but she infected her family and one sister, a girl of fifteen years, who died from diphtheria.

I know of no other city which has neglected to make provision for such cases. The late John H. Stratford, the donor of the hospital, was deeply sensible of this want, and was about to supply it at the time of his lamentable death.

The addition of two or three rooms, with a separate entrance, which need not cost over $1,000, is all that is at present required. This has been done in Guelph and other places. There are probably generous, warm-hearted, Christian gentlemen in this city, blessed with wealth, who are at this moment anxiously looking for an investment sure to return a large interest in something better than sordid money. If so here is a noble opportunity. Failing this, it seem to me, that humanity and public safety alike demand that the means for this necessary work be provided by the corporation without delay.

*Cholera Infantum, etc.*—The number of deaths from cholera infantum and diarrhœal infections of children was 23 in 1887, 26 in 1888, 18 in 1889, and 10 in 1890. These deaths occur almost entirely among young children fed upon cow's milk.

The great reduction which has taken place in Brantford in the mortality from these affections is undoubtedly largely due to the action of the board in regard to the use of starch refuse in feeding cows. This has been used extensively, but owing to its rapid decomposition in warm weather, the board interdicted its use during the summer months.

The actual saving of life on this account has been large, but there has also been a great reduction in the amount of non-fatal sickness of this kind referred to.

The undoubted relation of cause and effect in this regard is fully established.

These diseases are almost entirely preventable by the used of perfectly good and pure milk, and if this cannot be guaranteed, then by the sterlization of the milk by heat.

*Consumption.*—The number of deaths from consumption in this city during the past year was twenty-two. Although this is proportionately less than the number in most Canadian cities, it still amounts to 11 per cent. of all deaths.

In view of the frightful mortality from this fell disease, and of the fearful amount of human suffering caused by it, the supposed discovery of the celebrated Dr, Koch, of a cure for the disease has excited the most profound and universal interest. The anxious eyes of hundreds of thousands of victims of this scourge are now turned toward Berlin. It is much to be feared that most of those eyes will be dimmed with disappointed hope. It may be permitted us, however, to hope that the brilliant researches of this great German scientist, following the steps of the most renowned Frenchman, Pasteur, and utilizing the methods invented by a distinguished Englishman, have evolved, or may evolve, an agent capable, under favorable circumstances, of destroying the bacillus tuberculosis in the human system and, at least in the early stages of the disease, arresting and curing tubercular consumption.

Should this amazing result be achieved, I do not know why we should not look forward with hope to the discovery of an equally efficient agent for the treatment of that other dread disease, cancer.

*Milk Supply.*—The milk supply of Brantford is furnished by about twenty dairies, four of which are in the city and the remainder in the township. These have all about 360 cows, but additional supplies are obtained by many of the dairymen from neighboring farmers, so that the number of cows supplying the city may be from 400 to 450.

Nearly all the milk is distributed directly from the delivery wagons, there being no shops for the sale of milk. Every one of these dairies have been inspected during the year, some of them several times.

Samples of milk from them all have been taken four times, the result of the examinations of which have been published.

The time at the disposal of the sanitary inspector has not permitted of more frequent inspections, but I deem it of great importance that such inspections should be made at least once a month, and that they should include, not only all the dairies, but also every outside source of supply.

An incident came under my own observation lately which well illustrates the importance of frequent inspection. I happened to be at a farm-house when a dairyman called there to get an additional supply. He told me that the reason he came that distance was because at the farm-house nearer to him, where he had been getting his supplies, he saw one of the cows being milked and some blood and matter from a diseased udder were "milked in." The farmer, a man of good reputation, said it would never be noticed when mixed with a quantity, and was angry because the milk was refused. The dairyman, however, decided not to take it, on the high moral grounds as stated by himself, "that the inspector might come on him at any moment."

There have been no reports during the year from any dairyman of any disease or sickness among his cows.

It is hardly credible that there has been not a single case of sickness or of diseased udders among all these cattle during the year.

If there has been any such it is plain that the dairymen or some of them have criminally violated their agreement to report any and every case so that it might be inspected. A frequent inspection and an infliction of the extreme penalty of the law on any detected criminal would undoubtedly have a wholesome effect.

The dangers of an impure milk supply have been much underestimated. We all know that the feeding of putrescent food may cause cholera infantum. We know that great loss of life from typhoid fever has occurred from the external contamination of milk by typhoid germs, and that the infection of scarlet fever has often been conveyed in a similar way. Elaborate experiments have been made to determine whether the milk of tuberculous cows can be a cause of consumption, with the result that milk of 55 per cent. or more than half the cows so effected was found capable of conveying the disease.

And now during the year 1890 some startling discoveries have been made as to the relation of milk to diphtheria. Many epidemics of diphtheria in England in recent years have been traced to milk, but how it became contaminated could not be demonstrated. At the instance of the London health authorities, investigations were made by Dr. Klein. Two healthy cows were inoculated with cultures of the bacillus of human diphtheria, which reappeared in their milk in virulent form. The cows also became affected with fever and with a pustular eruption on their udder and teats, one of them died on the fourteenth day.

I have briefly referred to these facts for the purpose of emphasizing the necesssity of a rigid supervision of all the sources of our milk supply.

*The Ice Question.*—Last year this board passsed a resolution forbidding ice to be cut in the canal basin, except for brewery purposes. In view of the scarcity of ice this resolution was modified to allow ice to be cut there for last season only, for cooling purpose only, upon the dealers undertaking, under a penalty, to conform to certain regulations laid down by the board. After the ice was cut and stored the dealer did not abide by his undertaking in regard to the regulations intended to prevent the ice being used except for cooling purposes. In view of some legal difficulties no action was taken in the matter. As the consumers had no means of knowing that the ice supplied them was got from the basin they were liable to use it for any and all purposes, and in many cases undoubtedly did so use ice got from the basin, which being the receptacle for much of the filth of the city, including the drainage and sewage of hotels and public buildings and large number of private houses, is little better than a cesspool.

Freezing water removes a certain portion of impurities, including the salt and coloring matter, leaving in the ice from 81 per cent. down to 2 per cent. of the filth which was in the water.

Having regard to the stagnation and shallowness of the water in this basin, the ice here will probably retain 50 per cent. of the impurities.

Numerous cases of typhoid fever have occurred this year in localities draining into this basin. The discharges from one of these alone, if any of them escape into the basin may cause any number of cases of typhoid, should the ice chance to be used in food or drink.

Is it proper that this risk should be run merely to avoid going a mile for ice. Have we not enough typhoid now without inviting an additional amount?

I think this board might wisely forbid the cutting of ice in this canal basin, for any purpose whatever.

*Sanitary Inspection.*—Two hundred and seventy complaints were entered in the books of the sanitary inspector during the year, all of which, I believe, were satisfactorily dealt with, excepting one or two difficult to deal with, and which will demand further attention. Seven hundred and eighty-four house to house inspections were made by him ; four hundred and ninety-four privy pits were ordered to be emptied by him, all of which were done. Thirty-one others were voluntarily emptied. Two hundred and thirty of the pits were directed to be filled up with clean earth and dry earth closets substituted, all of which was done. Only one new pit was dug during the year so far as is known. It was ordered to be filled within ten days, which was done. Twenty-three dairies were inspected and ninety-four samples of milk taken for examination. Forty-seven samples of water were examined, two-thirds of which were bad. Sixty-three volumes of books from the free library, which had been handled by patients with diphtheria, scarlet fever, etc., were disinfected. One hundred and fourteen notices were sent to the public schools in regard to infectious diseases and one hundred and three to the free library. Disinfection and fumigation of dwellings in several cases of infectious diseases were personally supervised by the inspector.

Most of this work and much other work, including market inspection, has been personally done by the sanitary inspector, Adams. Having regard to the fact that only a portion of his time is given to sanitary work it has only been possible to accomplish so much by activity and energy and utilizing every moment of time at his disposal.

EGERTON GRIFFIN, M.D.,
Medical Health Officer.

---

GUELPH.

*Medical Health Officer's Report.*

I have to congratulate your Board on the comparative freedom of the city during the past year from any epidemic disease and on the low death-rate we have experienced, and the increasing compliance on the part of the public with the provisions of the Health Act. While we have not been free from diseases which are due to removable causes, I believe their extent and severity have been as moderate as any city in the Province, and have been considerably limited by the sanitary precautions that have been taken.

*Slaughter Houses* —These have been inspected at frequent intervals and found generally satisfactory. Complaints have been made several times about one or two of them, and on investigation have been found not altogether without cause.

*Hog Pens.*—I am glad to state that there has been a large decrease in the number of these since orders were given for their removal to certain distances from dwelling houses. Every year a few have been found hidden away here and there within the prescribed distance from the dwellings, and in some cases have given rise to considerable trouble. I think that if we had a better way of getting rid of all kitchen refuse there would be less temptation to keep hogs.

*Removal of Garbage.*—The removal of garbage this year has been more systematically attended to. The greatest difficulty is where vegetable matter in a state of decay is allowed to collect. In some places it would almost require the presence of a sanitary inspector to keep things in order, and I think that there should be a public scavenger to remove all garbage from the city, then all refuse would be gathered up and exposed instead of being spread out and concealed.

*Disposal of Excreta.*—This work has been carried on by the contractor, Mr. Hughes, in the same manner this year as last. A large number of privy vaults have

been emptied during the past year and the contents removed to the building on the nuisance ground, where the most of it has been manufactured into a fertilizer. Very few complaints have been made with regard to this matter.

*Wells.*—Quite a number of wells have been cleaned during the past year, and seven samples of water have been examined ; four out of the seven have been found unfit for drinking purposes ; these wells have been closed up and the city water put in.

*Complaints.*—A large number of complaints have been made during the past year and the sanitary inspector finds that in many instances the complaints so made are justifiable.

*Sewerage.*—In my previous reports I have referred to this matter very strongly, and I need but say that the extension of our water works system not only creates, by the freer use of water, a necessity for better drainage.

*Contagious Diseases.*—The principal matter to note under this head during the past year is diphtheria. The number of cases which have been reported by the medical gentlemen of the city are sixty-one ; twelve of these have proved fatal. The majority of the cases have been treated at the General Hospital and St. Joseph's Hospital. Some of the cases have been attributed to bad water and bad drainage and again in some cases the most rigorous examinations in some houses where the disease had occurred failed to detect any source of danger. Wherever cases have appeared, rigid isolation has been resolved upon ; the other children of the family have been kept from school, and the medical gentlemen of the city have, as soon as the disease subsided, ordered the house and clothing to be disinfected, and I am glad to say that at present the disease appears to be dying out.

*Milk.*—During the past year eighteen milk vendors have taken out a license for the purpose of selling milk in the city and no complaints have been made with regard to the milk sold. The cattle and the stables have all been inspected and found clean, with the exception of one on Surrey Street. This person has altogether too many cows for the size of the place, and complaints are frequently being made against it, and from my own personal knowledge I consider the place quite unfit to keep such a large number of cows in, and I trust that this Board will take some steps to cause the offender to remove them to a larger place, as I do not think that milk from these stables is healthy.

*Typhoid Fever.*—There have been very few cases of this disease reported during the past year.

*Scarlet Fever.*—Of this disease, eighteen cases have been reported.

*The River.*—Only on one or two occasions have complaints been made about the river between Goldies dam and Allan's bridge, and this was at the time that the water was drawn off for the purpose of repairing the dam, and I know of no cases of sickness having been reported from those who reside along the river banks. A short time ago I received a letter from Dr. Bryce, the Secretary of the Provincial Board of Health calling my attention to the river and informing me that he had received a letter from some gentleman of the city making complaints regarding the bed of the river. This matter, gentlemen, I leave in your hands, and in conclusion I think that the citizens of Guelph should be congratulated upon the hearty manner in which they have at all times assisted the sanitary inspector in the discharge of his duties, and from my own personal knowledge I consider the city in a good sanitary condition.

During the past year a project was started by a lady in the city to provide for the conveyance of persons suffering from accident or in such a weak and low condition that it would be dangerous to move except in a recumbent position and in the easiest manner possible. In speaking to a gentleman in the city he fully indorsed the view, and in the most generous manner offered to supplement the amount required, after the lady spoken of had collected all the subscriptions she could.

The appeal for subscriptions has been met most generously by every class of the community. A properly constructed ambulance was decided to be the best means of accomplishing the object proposed, and this plan has been adopted. For a long time the

members of this Board have felt that it was dangerous to the public health to have cases of contagious diseases taken to the hospital or elsewhere in cabs or conveyances used by the general travelling public. Those connected with the obtaining of a public ambulance have agreed to devote what surplus funds they have after the purchase of an ambulance for the obtaining of a cab to be used solely for the purpose of conveying cases of contagious diseases, and a committee of competent gentlemen have been appointed to carry out these proposals and ask this Board to vote such an amount as in their opinion is advisable.

Captain Clark, Sanitary Inspector, has performed the duties of his office to my entire satisfaction and to his active and earnest efforts I attribute in a great degree the removal of many nuisances, the good quality of the milk supply and the satisfactory sanitary condition of the city.

T. A. KEATING, M.D.,
Medical Health Officer.

---

HAMILTON.

*Medical Health Officer's Report.*

You are aware that early in the year influenza of a somewhat epidemic character appeared in several parts of the Dominion. As the disease had been prevailing in European countries it was supposed to have taken a tour to this continent, and therefore received the fashionable name of "La Grippe" commonly called the grip. The cases which came under my observation did not present any noticeable feature to enable one to distinguish between the imported and native forms of the disease which we have occasionally met with. I am not aware that any special microbe has yet been discovered to perpetuate its species, or that it comes under the head of contagious diseases, but that it is due rather to atmospheric causes producing catarrhal symptoms, accompanied with great debility. Persons of weak constitutions and those predisposed to pulmonary complaints were easily attacked, many not having taken due precautions against exposure to its influence, our mortality has, no doubt, been somewhat increased by it—too early exposure during convalescence from an attack has in some cases caused a relapse, ending either in speedy death or a protracted recovery.

It is always pleasing to be able to show a low death-rate, but the latter does not necessarily indicate a healty condition, for a vast amount of sickness may exist without consequent deaths. Some statisticians consider that a death-rate under 22 per 1,000 must be inaccurate, but such an idea is complete nonsense.

Population, 45,000; deaths, 744; rate per 1,000, 16.53.

The medical profession agree that the city has been very healthy during the summer months. Such an admission must be received as a sure indication of our good sanitary condition. The registration of contagious diseases and the placarding of houses for diphtheria and scarlatina continues to have a beneficial effect, and by no means leads to secrecy, as it is supposed to have done in other places. Measles, whooping cough and mumps are always badly reported, owing to only few of the cases receiving medical attendance; some steps ought to be taken to enforce a better registration. 724 cases of measles, 14 of whooping cough, 29 of mumps and 2 of chickenpox were reported. I believe the above to be a low estimate of the number of cases.

The following cases were reported: 175 cases of scarlatina and 6 deaths, 46 of diphtheria and 6 deaths. There were 94 cases of typhoid with 8 deaths. Eleven of those cases were not reported to me—they were in the hospital. Scarlatina is in excess of last year by 24. Diphtheria is less by 16, and typhoid is 55 less. Some of the cases originated in Toronto and the United States. I look upon a diminution of those diseases as a better criterion of the sanitary condition than even a low death-rate. Both combined must be convincing.

I notice occasionally as a cause of death the term "heart failure." All deaths end in heart failure, as well as in shortness of breath. It would be desirable to have the cause of death made more intelligible. I don't impute the error to medical men, but to the friends of the diseased, who are often careless how they register the cause of death, and this shows the necessity of your cemetery superintendent being satisfied with nothing short of the medical certificate—although some medical men write very indistinctly. Your Board having settled the question regarding the establishment of privy vaults, have wisely concluded not to grant permits when the sewers are available. I hope that decision will remain unaltered; persons who desire earth closets should be obliged to put proper ones in, and have them cleaned out every month and properly attended to—the by-law is defective in allowing the contents to be kept on the premises longer. In the following statement, note that while permits have been granted for 122 new privy vaults during the year only 59 have been abolished, leaving the privy vault nuisance victorious by an increase of 63. The difficulty of finding a dumping ground for the contents of those vaults is becoming more apparent every year. A proper furnace ought to be erected to burn up the stuff—It will have to be done soon.

Milk Inspector Nixon reports having inspected cow byres, dairies and other places where milk is sold to the number of 1,905. the condition of which places he classifies as follows; Very good, 53: good, 1,316; fair, 488; bad 6; closed, 2; notified to take out licenses, 33; summoned before the magistrate, 7; of which 5 were fined and 2 were warned.

| | |
|---|---|
| The total number of licences issued | 222 |
| Number of samples of milk collected | 1,084 |
| Number of duplicate samples to milkmen | 94 |

He desires to call your attention to the vague manner in which the by-law reads in reference to the offence of pasturing cattle in filthy places, or places contaminated with sewage. The nearest approach to making this an offence is embodied in section 8, where it reads, "or milk from cows fed upon garbage or other like substance," and he considers this not sufficiently definite to cover the offence referred to. Although I am not sufficiently versed in the inexplicable peculiarities of law requirements, I consider that the words "or other like substances" were sufficiently definite, and were inserted to meet the offence alluded to. During the year I have examined 1,084 samples of milk with the Feser lactoscope, the results have been published in the city papers. I would call your attention to the fact that during the months of May, June, July, and August, out of 360 samples examined, 181 showed under 3 per cent of butter fat in varying proportions, 76 reached to 3 per cent. and 16 gave 3½ per cent; between 3 and 3½ there were 69, and over 3½ per cent 22, showing the large number of 326 below the proposed legal standard. Complaints have been made by parties that they can get scarcely any cream off the milk got from the milk dealers. I occasionally meet a gentleman from Toronto, who never fails to praise Hamilton's milk, saying that it is cream compared to what he gets in Toronto. If the latter cannot compare favorably with the milk of the above four-named months, it must have been very poor indeed. During the corresponding months of 1889 the standard was very good. Why should it be so poor this year? Early in the summer I was told that the pasture was too luxuriant (?) and had very little substance in it. Later on I was informed that it was too dry. Under both conditions, however, the cattle were said never to look better; they were sleek and healthy, but when I examined two samples of milk, both coming from adjoining farms, pasture and herds being equal, and find in one sample 3⅝ of butter fat, while the other shows only 2¾, I naturally conclude that the pasture does not cause the difference in quality. The remedy of these eccentric freaks of the cow lies at Ottawa. Our respected Dominion analyst, Mr. Macfarlane, should make a higher standard than 3½ per cent, but let us have it at that, and I have no fear but that the cows will find it expedient to comply with the demand. Complaints have been made about defective plumbing. On examination the fault was seen to be in the drains, which were badly constructed. A number of houses where typhoid existed were examined, where the connection with the sewer was badly sealed. Clause 16 of the by-law has never been enforced. I would suggest that it should be put into action.

I think, however, that the registration should be made either with the building inspector or at the office of the board of health. The scavenger system has been in operation now for five years, a vast amount of good having been effected through it during that time. About twelve years ago I asked to have that system introduced, but strange to say I was then told that the people were not sufficiently ready for so sweeping an innovation. I hope that future sanitary improvements will not take so long a period of incubation to develop into maturity. I would like to see the usefulness of the system more complete by householders providing strong boxes which the scavengers can handle without breaking in a short time. Those boxes or barrels should be kept on the premises convenient for the scavengers, and should not be left on the streets or in the alleyways for indefinite periods. It is very important also, that these vessels should be kept properly covered from either snow or rain. The by-law requires that it should be done. The householders and scavengers should mutually assist each other in carrying out an object which is a real sanitary blessing. Quite a number of complaints have been made from two districts of irregularities in removing the refuse, which should not be overlooked. There should be some more prompt way of dealing with this matter than exists at present. The prospective improvements in the northeast end of the city if carried into effect will prove not only valuable to that district, but will also be a sanitary achievement of great advantage to the whole city. I hope that no local prejudices will mar so desirable an undertaking. In conclusion, I would observe that what are called breathing spots, and which seem to be so necessary in large crowded cities, do not appear to be so urgently needed in Hamilton, but if they are to be the order of the day let them be selected where some sanitary benefit can be derived from them. In my opinion, every man's home should be of such sanitary excellence that no better breathing spot could be found.

ISAAC RYALL, M.D.
Medical Health Officer.

---

KINGSTON.

*Medical Health Officer's Report.*

While we have not been free from diseases which are due to removable causes, I believe their extent has been as moderate as any city in the Province, and have been limited considerably by the sanitary precautions taken, among others, that of excluding all children from the public schools of families in whose houses any contagious disease was found to exist, and not permitting them to return to the schools again until the physician who had charge of the case certified that they were entirely free from the disease.

I will refer briefly to the varions points which demand our attention.

*Contagious Diseases.*—During the past year diphtheria was the most prevalent disease, there having been 42 cases reported and two deaths, there were 30 cases of typhoid fever and seven deaths, 26 cases of scarlet fever and no deaths, and nine cases of measles, no deaths.

*Slaughter Houses.*—This source of public nuisance is now about overcome, as the health of the public is of greater importance than the butchers' convenience. The "vested right" which many butchers assume to be theirs to create a nuisance has given way under the pressure brought to bear upon them under the Public Health Act (as regular inspections have been made of these premises, which are required to be kept in much better sanitary condition than in former years) and public opinion, which is now more alive to the necessity of thorough cleanliness.

*Piggeries.*—No pigs were allowed to be kept within the more thickly settled parts of the city between the 15th of May and the 1st of November.

*Cow Byres.*—We have within the city a number of places where cows are kept. The premises are not at all suited for the purpose for which they are used, and in the

interest of the public health such places should not be allowed. I would strongly recommend that no cow byres be permitted within certain limits to be defined, from time to time, by the board of health.

*Privy Pits.*—There were 441 permits issued to clean privy pits during the year. In all cases all pits opened were thoroughly emptied and limed and the contents removed outside of the city limits and deposited upon a portion of a farm acquired for that purpose. The amount of night-soil removed from them being 22,055 cubic feet.

*Earth Closets.*—The use of earth closets is increasing rapidly, and in all instances where the premises are limited for space the privy pits have been closed and earth closets established.

*Garbage.*—The removal of garbage has been carried on systematically by a scavenger appointed by the city, whose duty it is to make regular calls upon all persons to remove their garbage as often as they require him.

*Sewers.*—The question of the drainage of the city into the harbour, as at present, will have to be dealt with by the corporation at no distant date. Since the water supply has been taken over by the city, and the rates so much reduced, the system of water carriage is increasing to such an extent that it behooves the city council to take into its consideration the construction of an intercepting sewer along the water front for the collection of excreta and other filth, which is now being discharged into the harbour, thereby causing the pollution of the water and endangering the public health.

*Water.*—As the present source of the water supply is not at all satisfactory to the consumers and at the same time not what it should be, I would recommend the suction pipe be carried out further into the lake and that the system of filtering be adopted; when such is done we will have as pure a supply of water as it is possible to obtain.

*Public Baths.*—It is indispensable that free baths be established, open early in the morning and kept open late in the evening. In the majority of poor people's houses it is rare to see a bath, and they are, therefore, deprived of the necessary means of securing perfect cleanliness. It is evident the labouring classes would derive a great benefit from such an establishment, and I trust the corporation will loose no time in erecting spacious baths in the interest of the public health.

SAMUEL H. FEE,
Medical Health Officer.

---

LONDON.

*Medical Health Officer's Report.*

In laying before you this, my fifth annual report upon the sanitary condition of the city for the year ending on October 31st, I have again the pleasure of stating that the health of the city has been exceptionally good, the death-rate being the lowest ever yet reached, viz., 13 per 1,000 of the population. The total number of deaths for the year, including those from the new ward, was 373, of these consumption carried off the large number of 32, and cancer 12. Twenty-one cases of scarlet fever were reported and three deaths. Of diphtheria there were 19 cases reported and three deaths. Typhoid fever is credited with five deaths. The same number of violent deaths took place as last year, viz., nine, as follows:—One by suicide, one by murder, one by hanging, one by railroad accident and three by various other accidents.

An epidemic of influenza or *la grippe* visited the city, which appears to have been universal during the months of January and February, and although only immediately fatal in a small number of cases, was the predisposing cause of many deaths, particularly among the aged.

The exceedingly small number of deaths from typhoid fever and diphtheria, diseases which have their origin in impure water and filth, is evidence of the good sanitary condition of the city.

The people are becoming convinced of the fact that the cleaner their yards and premises are kept and the substitution of pure city water for the foul, contaminated wells, just so much less will they have of sickness, expense and mortality. Notwithstanding this, there are many who will allow themselves to be summoned before the police magistrate rather than comply with the requirements of the Public Health Act to prevent their premises being a danger to themselves and their neighbors.

The Carling Creek sewage problem is still in *statu quo*. Year after year the question of constructing a trunk sewer is brought up, but the enormous cost of transforming the creek into a sewer of sufficient capacity, together with the uncertainty of how the suits now pending against the city for discharging its sewage into the river will end, have prevented any action being taken by the Council. The least costly, and probably the best, way is that suggested by Dr. Bryce, Secretary of the Provincial Board of Health, and concurred in by the City Engineer, would be to lay a 12 or 14-inch sewer pipe along the bed of the creek for sewage only, leaving out storm water, and let the creek take care of itself. In this way no sewage would enter the creek, which could then be kept free of pollution and restored to what it once was—a very pretty stream of clear water. The river has been blamed by some for being the cause of much sickness in its neighborhood, which is not borne out by facts. During the four years from '86 to the present time the total number of cases of infectious diseases in the city was 219, distributed among the different wards as follows:—The First Ward had in the four years 16 cases; the Second, 29; the Third, 59; the Fourth, 61, and the Fifth, 54. Thirteen of the 29 cases in the Second Ward occurred in St. Joseph's Orphan Asylum, introduced by a child recovering from diphtheria, brought there from Hochelaga, leaving 16 cases only for that ward.

It will thus be seen that the First and Second wards, lying along the much abused river, had only 32 cases of infectious diseases, while the other three wards, not along the river, had 187.

In some of the large retail stores of the city, where large numbers of young females are employed, some of whom come long distances and remain the whole day, separate conveniences are not provided, and several cases of serious illness have resulted in consequence. Efforts have been made to induce the proprietors to make the necessary additions, but so far with little success. Although there is no way of compelling the proprietors to do what they should in this matter, it is hoped that public opinion and their own sense of what is right will force them to remedy the evil. I desire especially to call the attention of the Board to the insanitary condition of the new Sixth ward, which is very much in need of more sewers and better drainage. A large stagnant pond on the flats west of Victoria bridge is not only a nuisance, but dangerous to the public of the ward.

Quantities of sewage from Craig street and the Wortley road empty into the pond and is also deposited along the base and sides of the hill for want of sewers, especially on Craig street. The owners of the land refuse to make the drain, but the drain and sewer on Craig street should be constructed before the warm weather of spring and remove this element of danger from the people of the ward.

The City Council has done excellent sanitary work, for which they deserve the gratitude of the public, by block-paving so many of our streets this year, which not only vastly improves the streets but by removing so much filth and substituting a pavement which can always be kept clean, will be an important factor in maintaining the public health. Another good work would be the block-paving of the public lanes, which are generally the most pestilential parts of the city. The benefits derived from this, in a sanitary point of view, would far outweigh the cost. These lanes could then be kept clean, which in their present condition is almost an impossibility.

T. V. HUTCHINSON, M.D.,
Medical Health Officer.

OTTAWA.

*Medical Health Officer's Report.*

I beg to lay before you the annual Report of the Health Department for the year ending on 31st October, 1890. In so doing it is satisfactory to note, as it appears from tables of mortuary statistics here appended, that the death-rate for the last twelve months was somewhat less than that of the previous year; the figures for 1889 being 22.86 per thousand of the population, and 21.81 those for the period comprised in this report. And this notwithstanding the fact that the early part of the year was marked by an epidemic of influenza, commonly known as "La Grippe," which invaded the whole community and almost doubled our death rolls for the months of January and February as a result of its fatal consequences. With this exception, the public health throughout the year has been fairly good, and such as to compare most favorably with previous years. As a sure indication of the sanitary condition of any city, if we consider the mortality from the so called zymotic or preventable diseases as shown in comparative tables here appended, we have still greater cause for gratification in the fact that during the last year the rate of mortality from this cause was only 6.02 as compared to that of the previous twelve months, which was 7.46 per thousand. Though these figures may justly be looked upon as more or less satisfactory there is no reason to doubt that they may still be much lowered as our city progresses towards a more perfected state of sanitation, and as the people are educated to a better understanding of the laws of health and more consistently mindful of their requirements. Far too often still have we to battle with such terrible maladies as diphtheria, scarlet fever and typhoid fever, which constantly keep cropping up and as surely contribute their quota of victims to our death roll. More especially is this true of diphtheria, which is chiefly spread by personal infection, and which during the last few years has prevailed so extensively throughout the land.

Owing, however, to the unceasing watchfulness exercised by the Health Department over this justly dreaded disease, and to the maintenance of hospitals on a satisfactory footing of efficiency for the isolation and care of such cases, the number of fatalities from this cause in the city during the last year has been comparatively small. The number of contagious and infectious diseases treated during the year in these hospitals is shown on a table here attached, as also the number of infectious diseases reported at the Health Office. The extension of the clear water pipe, through which the city is supplied, up the Ottawa River far beyond the many sources of pollution with which it was formerly surrounded, and the replacing of the defective wooden pipe which had done service since the origin of our water works system, by a steel pipe, improvements which the Health Department has been largely instrumental in bringing about, must be reassuring to the people as to the greater purity of the water they use and therefore conducive to their welfare.

In accordance with the regulations of this department the ice supplied the city for household purposes is taken above the Chaudiere on the Ottawa River, and I believe is fairly wholesome. Another matter which has largely engaged the attention of the Health Department during the year is milk, an article of diet, as you are aware, more or less extensively used in every household, and upon which the little ones are almost solely dependent. With a view of better controlling the sale of this article in this city, by-law No. 993, passed by the Council of 1889, came in force on the first of January of the past year. In compliance to this by-law 73 milk vendors have registered their names at the Health Office during the year, and received licenses as required by law for the carrying on of their business.

Seventy samples of milk taken from milk vendors at different times during the summer months, were tested by me with results satisfactory to the Board, and pretty clearly demonstrating the fact that the milk supply of Ottawa is equally good if not superior to that of any city in Canada.

Further details of the work of this department in connection with this matter, which, it cannot be denied, is a very great factor in the welfare of the community, may be seen in the Sanitary Inspector's report to which I beg to refer you.

Between thirty and forty sanitary drains and sewers have been recommended by your Board during the year, which, when completed, will effect a thorough and systematic drainage of almost the whole city; and though comparatively few of these have been carried out during the past season all steps necessary have been taken so that early in the next these much needed sanitary improvements will be proceeded with and pushed on I hope without interruption until fully completed.

In connection with this question of vital interest to the community it is to be regretted that the corporation has been unable so far to carry out the plumbing by-law and the appointment of a competent inspector of plumbing and drainage. Surely the experience of the past has been such as to very forcibly demonstrate the necessity for the very close supervision of such works in the interest of the public; and it is to be hoped that such an appointment will not be unnecessarily delayed.

The disposal of household refuse and ordinary garbage which, in a sanitary point of view, is a question worthy of serious consideration, and which in our city as elsewhere has been a prolific source of worry and trouble, will be disposed of in the near future I hope by the organization of a system calculated to bring relief to the public without being oppressive in any way.

Table showing the death-rate per thousand, per annum, from zymotic diseases, as compared with total death rate in the city of Ottawa during the past seven years :—

| Period. | Population (estimated.) | Zymotic Diseases. | | | | | | | | Zymotic. | | All Causes. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Smallpox. | Measles. | Croup. | Scarlatina. | Diphtheria. | Fevers. | Puerperal Fever. | Diarrhoeal diseases. | Other Zymotic diseases. | Total deaths. | Rate per thousand. | Total deaths. | Rate per thousand. |
| 1884 | 31,000 | .... | 2 | 7 | 12 | 1 | 11 | .... | 195 | .... | 288 | 7.35 | 699 | 22.54 |
| 1885 | 33,000 | 3 | 3 | 19 | 3 | 14 | 12 | .. | 245 | .... | 299 | 9.06 | 759 | 23.00 |
| 1886 | 35,000 | 23 | 38 | .... | 1 | 44 | 14 | 1 | 240 | 8 | 369 | 10.53 | 933 | 26.65 |
| 1887 | 38,000 | .... | .... | .... | .... | 36 | 15 | .... | 150 | 6 | 207 | 5.23 | 778 | 20.47 |
| 1888 | 40,000 | .... | 2 | 2 | 2 | 62 | 46 | .... | 166 | 9 | 283 | 7.07 | 915 | 22.97 |
| 1889 | 43,000 | .... | 13 | 19 | 5 | 59 | 18 | 2 | 188 | 17 | 321 | 7.46 | 983 | 22.86 |
| 1890 | 44,000 | .... | 4 | 13 | 4 | 39 | 19 | 1 | 160 | 25 | 265 | 6.02 | 960 | 21.81 |

The total number of epidemic diseases reported at the Health Office during the year was 192, as follows :

| | |
|---|---|
| Diphtheria | 108 |
| Scarlet Fever | 57 |
| Typhoid Fever | 23 |
| Measles | 4 |
| Total | 192 |

A. ROBILLARD, M.D.,
Medical Health Officer.

## Stratford.

*Medical Health Officer's Report.*

As Medical Health Officer of the city of Stratford, I have the honor to present you with my first annual report on the sanitary condition of the city, in compliance with the provisions of the Public Health Act.

Such a report, especially when it is the first presented, must necessarily be of some length, but I have endeavored, while dealing with the different sanitary questions, to make it as brief as possible.

It affords me much pleasure to state that during the last nine months the health of the city has been remarkably good. During the first two or three months of the year we were, like most other places, visited by "La Grippe," but with the exception of some very old people, only one death seems to have been directly attributable to its effects. The actual number of deaths occurring within the city limits during the year was 90, which in a population of 10,000 gives a death-rate of 9 per thousand. This I am pleased to state is lower than any other city in the Dominion.

It is impossible for me to give an exact estimate of the number of contagious diseases in the city during the past year, on account of the registration of such having been very much disregarded. In July last, I sent to all the physicians in the city, a circular, calling their attention to rules Nos. 2 and 3, Section 17, Schedule A, of the Public Health Act, which directs them to report to the Local Board of Health or Medical Health Officer, all cases under their treatment of contagious diseases, such as smallpox, cholera, diphtheria, scarlet or typhoid fever, and reminding them of the penalty they leave themselves open to by neglecting any of these rules. I feel confident, however, that in the future they will do everything in their power to assist the Board in the discharge of its duties, and protect the health of the citizens generally.

Only one death is reported from typhoid fever. There have been five cases of diphtheria reported but no deaths, three cases of scarlet fever reported, but no deaths. Of the 90 deaths in the city 28 were of children under five years of age, and ten over seventy years.

The working of the Board has been considerably hindered by the delay in appointing an inspector, for without such an inspector the Board is practically useless. There must be some one to carry into execution the orders of the Medical Health Officer, and the provisions of the Health Act generally. To the inspector is delegated this work, as well as to see what abuses or unsanitary conditions exist, so that it is absolutely necessary that he should be unremitting, systematic and constant in his work, in order that it may be effective.

I am happy to state that the Council saw fit to engage the services of an inspector for the city since August last, and as evidence of the value of the work over which he exercises supervision, I here append a brief report of the work done by him during the three months of his connection with the health office.

Number of yards examined, 702 ; number of yards found clean, 663 ; number of yards ordered to be cleaned, 39 ; number of water closets examined, 745 ; number of water closets emptied, 93 ; number of wells ordered to be cleaned, 27 ; examined all dairies selling milk in the city, twice ; 21 samples of milk tested ; houses placarded for contagious diseases, 2 ; cellars examined and ordered to be cleaned, 17 ; served written notices to 37 different parties ; samples of water taken to Medical Health Officer for examination, 13.

*Dry Earth System*.—The Board having given its careful consideration to the general sanitary problem, as it applies to and affects the city in respect to our present and future requirements, concluded it was necessary, from the fact that a general sewerage system, for the present at least, is impracticable on account of the large expenditure requisite in a city covering so large an area as Stratford, and also from the difficulty which would be met with in disposing of the excreta at the outset, in their judgment, the system best adapted to our position, resources and environments, was to be found in the adoption of the dry earth or ash closet system. The policy of the Board, therefore, is to adopt that system into general use in Stratford, and I have no doubt that the citizens will cheerfully co-operate with the Board in this reform, when they become acquainted with its advantages.

I would recommend the board to ask the council to pass a by-law to make its use compulsory within a specified area, the more thickly populated part of the city, or that part included within the fire limits.

*Removal of Night Soil*.—A necessary sequel to the adoption of this system is the existence of a scavenger or contract service, for the systematic and regular removal

of night soil, with proper appliances and a fixed tariff of fees. I have pleasure in congratulating the Board in their submitting an agreement for such to the Council, and having the same adopted.

*Garbage Removal.*—For the promotion of cleanliness, health and comfort of the citizens, it will be necessary for the Board, at an early date, to have some arrangements made for the removal of garbage of all sorts. The common practice of throwing kitchen and other slops, ashes and all kinds of refuse on the surface of the ground in yards or streets, is injurious to the health of the public, and ought to be condemned, as decomposing organic matter is one of the most fruitful sources of those germs which produce diphtheria, scarlet and other fevers.

Prior to taking any action for the removal of such, it will be necessary for the Board to ask the Council to provide, either without or within the city limits, a garbage yard, where all such matter can be deposited, and as far as practicable, periodically burned up.

*Drainage.*—Intimately, if not inseparably allied to any permanently effective sanitary improvements, is the drainage of all private and public city property. The greater part of the preventable diseases are caused by a want of a proper system of drainage. We are favored with the best natural facilities for such. The Avon and its tributaries, afford in every ward, ample opportunities in this direction. It will be the duty of the Board to urge upon the Council a well considered general scheme for the whole city. Basing the cost on the local improvement plan, extending it over a number of years, would not make it burdensome, and by the completion of such a system, sanitary progress would be much more rapid and effective.

*Market Street Sewer.*—While dealing with the subject of drainage, I would like to call the attention of the Board to the condition of the sewer on Market street. This sewer is simply an ordinary wooden box, into which, in recent years, the city Council and Boards of Health have unwisely permitted the contents of a number of water closets to be emptied. The sewer should be used only for the purposes for which it was intended, that is to drain cellars and carry away the surface water off the streets. The dangerous practice of allowing the solid contents of water closets to escape into such a sewer should be remedied without delay. Such a condition of things soon poisons and pollutes the adjacent properties along the entire course of the sewer, vitiates the air where the sewer opens and forces the gases into dwellings not provided with stench-traps, thereby endangering the lives of the inhabitants. It is not very consistent to compel citizens to clean up their back yards and allow such a condition of hings to exist on one of our main streets. In the interest of private rights and the protection of the public health, the Board earnestly desires to see an end put to the source and origin of defilement in this and all similar cases. This can be done only by a proper system of sewerage or properly constructed cesspools, to receive the contents of all water closets. The former remedy is outside the province of the Board, the latter is not only within our province, but is imposed on us by statutory by-law, which we hope ere long to see enforced. It is difficult for the Board to carry out a reform in this case, so long as the city buildings drain into the same sewer. When private individuals are approached with reference to this matter, they say that the city has been doing this for years, and so soon as the Council complies with the requirements of the law they are willing to follow its example. The Board desires that the Market Committee take the initiatory steps at an early date to remedy this evil.

*New Buildings.*—So little attention has formerly been paid to having buildings properly drained and trapped, and many cases of sickness having been directly or indirectly attributable to this cause, I would suggest to your board the necessity of carrying out the clause of the by-law in relation to the sanitary condition of new buildings, either completed or in course of erection, and have the plans of drains, trappings, and the disposal of excrement submitted to the board for approval.

*Lock-up.*—Complaints having been made in one of our city papers about the condition of the lock-up, I, in company with the chairman, inspected the same, and found

it in a much better state than expected. With daily washing out of the cells and attention to ventilation as provided, I think there will be no cause at present for complaint.

*Water Supply.*—Our water supply, unfortunately, is not what it should be. I have examined the water from quite a number of wells, and in the majority of cases found it impure. This, in some cases, was due to the privy being too near the well, and in others, to a neglect to clean the wells in spring. The statute enacts that all wells must be cleaned out at least once a year, but with the exception of a few individual cases, the law with reference to this has not been observed. It would be well for the Board to notify the public, through the press, or otherwise, in spring, of their duty regarding this matter.

A certain percentage of the city is supplied with water from the Stratford Water Supply Co. In June last, the attention of the Board was called to the impurity of the water as supplied by them. At a joint meeting of School and Health Boards with the Water Supply Co., it was decided to have samples of the water sent to Professor Ellis, of the School of Science, Toronto, for analysis. Four samples were sent, and these were pronounced "bad," on account of the amount of vegetable organic matter they contained. This vegetable matter, although harmless in itself, forms nutrition for microbes, which may at any time develop to such an extent as to create low forms of fever, when the water is used for consumption. We have, however, so far been fortunate in this respect, but it is always better in time of peace to prepare for war.

Your Board reported to the Water Supply Co. the result of the analysis, and asked them to take such steps as would be necessary to furnish the city with its supply of water sufficiently pure for drinking purposes. So far your communication has been ignored. Such being the state of the case, it will be the duty of the Council to take such measures, without unnecessary delay, as will be required to have such unsanitary conditions removed, and an ample supply of pure water instead provided for the use of the inhabitants.

*Slaughter Houses.*—These have been inspected from time to time, and on the whole have been found clean and well kept. Complaints have several times been made by parties residing in the neighborhood of the disagreeable smell from one of them, and on investigation it was found that the complaints were well founded. The owners, however, decided to have the place cleaned up and removed outside the city limits.

*Erie Street Creek.*—Last year the Board directed the attention of the Council to the condition of the Erie street Creek. A resolution was passed to have it widened and cleaned. Apart from its unsanitary condition it is an eyesore to the public, and we earnestly hope to see our previous recommendations carried out early next spring.

*Schools.*—I examined the school-houses in the city and found them on the whole clean and tidy, with cheerful surroundings, the ventilation and heating being generally good, three or four being supplied by the Smead-Dowd system. I feel sure that the trustees and teachers are fully alive to all hygienic and sanitary requirements, and as far as is in their power, have them properly carried out. The precautionary steps taken by the authorities in reporting all contagious diseases occurring in the family of any of their pupils, and not allowing the re-admission of any child from where such diseases existed, unless previously provided with a medical certificate that disease no longer exists in the family, that disinfection has been properly attended to, and that it can be permitted with safety, has tended very materially to lessen the spread of contagious diseases. I would like, however, to call the attention of the school authorities to the necessity of having the law regarding vaccination carried out. Safety being the eternal law of vigilance, it is better to provide for the welfare of the whole community, by enforcing the proper measures for that protection in this respect, than have them suffer eventually by unnecessary delay. Of 1,208 children attending school, 375 were not yet vaccinated.

*City Hospitals.*—On account of its close relation to matters pertaining to the public health, I cannot close this report without congratulating the citizens on the great

boon of a city hospital so near completion. This has been a long felt want in this community, but we shall soon be able to boast of having one of the finest and best planned hospitals of any city of our size in the Dominion.

*Milk.*—Milk being the diet especially adapted to children and invalids, the question of impurity of such presents itself to the consideration of all interested in the welfare of the community. It is now a well known fact that diseases may be introduced into the human system by impure milk. That the germs of infectious diseases have been known to have been conveyed in it, and epidemics of scarlet fever, typhoid fever and diphtheria have occurred and been transmitted by it. Your Board, feeling that in the interest of the public health, a supply of pure and unadulterated milk was demanded, decided to enforce in the city section 13, sub-section 10 of the Municipal Amended Act, which authorizes councils of municipalities to appoint inspectors, and to provide for inspection of milk offered for sale, and for licensing and regulating milk vendors.

During the last three months, licenses were given to parties to sell milk in the city, each seller agreeing to sell milk of a proper standard, to report any contagious disease occurring in his family, or any disease amongst his cattle, to keep his byres and utensils clean, etc., and at any time his failure to do so being proven, his permit could be cancelled.

Samples from all the dairies have been tested twice. In August last ten samples were taken from different dairies selling milk in the city and forwarded to the Inland Revenue Department, Ottawa, for analysis. The result of the analysis, as made by Mr. T. Macfarlane, chief analysist, showed that seven samples were above the government standard of 3.50 per cent. butter fat, and three below. The highest being 5.04 per cent. and the lowest, partly skimmed, being 2.34 per cent. butter fat. It is intended, with the approval of this Board, to inspect dairies from time to time, to test samples of milk as often as possible, and have the results of such tests, with the name of the vendor of each sample printed in the city papers.

*Conclusion.*—In conclusion it is satisfactory to me to know that the efforts of the Board to carry out, as far as practicable, the provisions of the Public Health Act, has beyond my expectations, met with the cheerful and ready compliance of the people with its requirements, and as they become better educated to its advantages, the success of the Board will be more certain, and its work more easy.

J. A. ROBERTSON, M.D.,
*Medical Health Officer.*

---

ST. CATHARINES.

*Chairman's Report.*

The duties of the Board have not been arduous, and at the regular meetings during the year just closed, the Sanitary Inspector has submitted regular reports of duties performed by him. Also the medical fraternity have reported a few cases of infectious diseases, and your Board have had no cause for anxiety in regard to the general health of the city.

No extraordinary expense has been incurred, and I believe the amount expended will be less than any previous year since our organization.

There have been reported to the city clerk 60 cases of infectious diseases during the year, only three proving fatal.

The total death rate from all causes was 188. From this number I deduct 24 deaths, which were not caused by any disease, as follows: Ten still born, 9 old age, 1 suicide and 4 drowned, making the total number of deaths from diseases 164, or a death rate of 16.4 per 1,000.

Our Board considered it advisable that the attention of the Dominion Government should be directed to the stagnant condition of water lying on the east side of the old canal between locks 4 and 5. Considerable sickness has been in this locality for some time past, no doubt owing to the malarial condition of the water just outside of the towpath.

The existence of privy vaults and cesspools should be considered as one of our greatest nuisances at the present time, and some course should be devised with a view of having all underground vaults abandoned, and at as early a date as possible; in the meantime the cleaning out and disinfecting of the vaults should be rigorously prosecuted.

This duty the Sanitary Inspector will require to see properly carried out, as well as the removal of garbage of a filthy nature from yards or lanes.

The foregoing suggestions and all other matters that may arise in connection with the sanitary condition of the city I have no doubt will be carefully attended to by our Board in due time.

S. G. DOBSON,
Chairman.

---

ST. THOMAS.

*Medical Health Officer's Report.*

I have much pleasure in stating that the sanitary condition of St. Thomas is very good. Our death rate has been lower than any previous year since 1885. The number of deaths in 1885 were 162, and they have gradually decreased to 124 in 1890.

I have no doubt this improved sanitary condition is to a great extent due to our excellent system of sewers and drains; the surface soil is dry; we have no stagnant water in the city. Our sanitary inspector is vigilant, consequently the garbage and other impurities are frequently removed.

The zymotic diseases have been light. We have had 4 deaths from typhoid fever; 1 from diphtheria and none from scarlet fever, measles or whooping cough. Scarlet fever has made its appearance in different parts of the city, the cases being remote from each other. The only way that this can be accounted for is by the clothing of children not being disinfected before resuming attendance at school.

The system of placarding the houses did not at first meet with general favor, but since the people have seen the beneficial effects from it they have come to the conclusion that it is a good thing. I must say that the plan has not been strictly carried out, but I intend that it shall be done during the ensuing year.

WM. C. VANBUSKIRK, M.D.,
Medical Health Officer.

---

TORONTO.

*Medical Health Officer's Report.*

I have the honor to present what may be termed the Annual Report of this department; but owing to the fact that over nine months of the year my predecessor discharged the functions of head of the department, I think it inadvisable for me to attempt to give even a synopsis of what was done during that time. The statistics which will be found in what I consider the most appropriate places for introducing them, will give an idea of the amount of work performed by this department during the year. My desire, as it will be my endeavor, is not to bring forward so much a showing of what has been done as what remains to be done, trying to point out what I consider insanitary and deserving of our most strenuous efforts to set right. In this way, I think, matters will be brought forward which will be the more likely to prove profitable to you who take an interest in this important branch of civic affairs.

The public are fast realizing the importance of sanitation, still there are many who have but a vague idea of it. Especially is this found to be the case among the lower class of society raised as it were in defiance of the laws of hygiene. It is here that the sanitarian meets with the greatest difficulty, between poverty and smallness of habitation on the one hand, a general carelessness and ignorance on the other. The best advice is often received as the essence of the absurd. Notwithstanding all this that tends to dishearten

the sanitarian, he must still strive to devise means for the impoverishment and destruction of the micro-organisms of disease which, sad to say, seem ready to spring into a state of dangerous activity in receiving apparently little encouragement.

One of the greatest insanitary evils existing in the city at the present day is the large number of privy pits doing service, though there have been some 88 of these abolished during the year, water and earthen closets being substituted; yet a vast number remain saturating the ground with food for germs of disease. These pits should forthwith be made a nuisance of the past, and where means allow water closets substituted, otherwise dry earth closets.

The night soil should be destroyed in crematories as the safest method of disposal. The present method of disposal of the garbage by having dumping grounds in different parts of the city with a view to levelling up the land is most objectionable and should not be tolerated under any circumstances. Crematories should be erected for its destruction. One of the best sites for the erection of one of these would be on the shore of Ashbridge's Bay, to which place the garbage and night soil from all parts of the city could be taken during the night on flat cars run on the street railway. In this way a considerable portion of the marsh might be reclaimed and the unseemly sight of filth carted through our streets obviated. If thought advisable one might be erected near Catfish Pond, the refuse being utilized to fill in with and the malarial tendency of this marshy place counteracted. A large portion of the residue from these crematories I have no doubt if properly dealt with would have a marketable value as a fertilizer, containing both potash and phosphate.

All stagnant pools of water, which I am sorry I have to admit there is quite a number throughout the city, especially along the old bed of the River Don, should be drained or levelled up with pure earth, as malarial forms of disease generally exist where drainage or levelling up of such pools is ignored. This, I am firmly of the opinion, has had much to do with the malarial form of typhoid fever which we have had in the city of late.

The very great extent to which cedar-block paving has been adopted is something to be deplored, and those who sanctioned its introduction deserve to be censured, and much more so if they countenance its continuamce. For what is it of a warm sunny day more than a fermenting mass of decaying wood, saturated with horse excrement, emitting foul odors and dampness, productive of disease?

The lanes should be cobble-stoned, and instead of the scavengers having to take garbage from each back door, there should be a receptacle of iron or brick for every ten or twelve houses into which the occupants should be compelled to deposit their garbage and waste paper. This would facilitate the work of gathering the garbage and insure none of it being left about the lanes as it is at present, a cause of disease and a frequent source of complaint. The ashes being similarly disposed of by being placed in a separate receptacle.

All slaughter houses in the city limits should be abolished, and public abattoirs constructed on the most modern and approved plan, in this way freeing our sewers of some of their most dreaded contents.

The steam method of disinfecting clothes in closed cylinders should be adopted, doing away with the necessity of using chemicals which are more or less dangerous and destructive to textile material. It was only a few days ago that a citizen mentioned, not, however, in the form of a complaint, that he had clothes injured to the extent of $200 by the method at present in use. The use of steam by the method I propose is rapid and complete, the clothes not being injured if proper care be observed in its use. The most resistant spore is destroyed in sixty minutes.

The selection and collection of ice for drinking purposes requires the exercise of just as much care as there is to be observed in the procuring of a source of pure water supply. Analyses of samples of water from the different places where ice is intended to be cut, should be made prior to the cold weather, bearing in mind the fact that the process of freezing does not insure the inactivity of germs when it becomes liquid again.

It is desirable that all ice stored for summer use should be pure and fit for drinking purposes, for the simple reason that the more easily procured ice which is used for

cooling purposes, in spite of the strictest supervision, is very apt to be sold for drinking purposes when the purer variety gets low in stock. This is where the danger lies.

The milk in general use by the citizens is far below the standard in the aggregate, between often being of a poor quality in the first place, and then having to stand the chance of being watered and skimmed in the second, it enters the family pitcher as very low in its proper proportions of nutriment. The sale of pure milk is something to be condemned in the strongest terms, when we remember that it is often the only food of the infant besides being generally used as the best diet for patients suffering with fever. If the milk is below the standard, the sufferer in either case is obtaining an an imaginary quantity of food. By all means an effort should be made to bring about an improvement in this article of diet. A bulletin appeared some weeks ago in the *Empire* newspaper containing the analysis of samples of milk from a number of places. Toronto had the highest percentage of adulterated samples. This is a sad state of affairs. While acting as head of the department I have analysed quite a number of samples, and have found them in most cases below the standard, some of them were very poor. The watering of milk is a villainy that should be deprecated in the strongest terms, as it may be done with an impure water. If such be the case the milk furnishes all that is necessary for the propagation and multiplication of the dangerous microbes introduced by the water. In this way milk may prove a source of typhoid fever, diphtheria, etc.

The ambulance service in this city is not as expeditious in its working as it might be. The inspector in charge of it should live on the premises where it is kept, and be supplied with a telephone, so that he may be obtained at any hour required. As it is at present, I have no communication with any of the staff after office hours.

The department is much in need of a proper conveyance in case of a smallpox epidemic, as at present there is no proper means of transit. There should also be a probationary building, that is, a place in which a case involving doubt should be kept some days until the case has been properly diagnosed by a medical man.

A small laboratory should be established in connection with the department for the analysing of water, milk and food or anything else that is thought desirable to have a report upon. It would not necessitate a heavy outlay—$500 or $600 would be ample—and I am positive it will be money well laid out if for no other object than the improving of the city milk.

I strongly advocate the abolition of wells and cisterns ; there is very little need of the latter, as the city water is particularly soft and well adapted for cleansing and laundry purposes, while it is not necessary to state reasons for condemning the former.

The sewers should be periodically flushed out for obvious reasons ; bad smells emanating from manholes being a frequent cause of complaint, and, it may be, often of disease.

A complete record of the plumbing and drainage of all buildings in the city would be valuable to the citizens in general. This record would take years to complete, and the sooner it is put on a proper basis of working the better. Citizens desiring to change their residence on application would be able to ascertain the sanitary condition of the dwelling they intend occupying.

On the 25th prox. I received a communication from a very prominent physician in this city, deeming the spreading of manure on boulevards inadvisable, as we have enough bad smells and sickness without deliberately encouraging more. For my part I think it would be well under the circumstances to discontinue its use altogether, as it might be productive of ill effects.

I am of the opinion that it would be well for many reasons if the inspectors of this department were uniformed. The orders issued by them would be more apt to receive prompt attention. One of the main objects to be gained would be to prevent men going around, either in the interest of private establishments or their own, representing themselves as sent out from this department. It is quite possible for most undesirable characters to gain access to buildings generally. At present the only means of knowing the inspectors of this department is by a badge, which can be easily duplicated.

A. R. PYNE, M.D.,
Medical Health Officer.

# TOWNS.

## Almonte.

*Secretary's Report.*

Our town during the year has been very free from infectious diseases, only some two or three cases having been reported to the Board.

Early in the year we had a set of rules prepared and printed (condensed from "The Public Health Act") giving all necessary directions to householders as to the proper disposal of garbage, night soil, etc., and disinfection of their premises. These were distributed by the inspector to each householder on his first round of inspection. These rules, we have reason to believe, were productive of much good. We instituted the system of dry-earth boxes for privies, which has been very generally carried out, and the remaining few who still adhere to the old system will, we believe, soon adopt the dry-earth system

Our town is peculiarly situated as to the matter of drainage, and on this point we have had considerable trouble during the year, and in one or two cases we had to resort to the machinery of the law to enforce the decisions of the Board, which had the desired effect.

The citizens of the town generally appear to be in unison with the Board in carrying out any ideas which tend towards cleanliness, and bearing this fact in mind future Boards may make still further improvements in that direction which we trust will be done.

L. COULTER,
Secretary.

## Amherstburg.

*Secretary's Report.*

The general health of the citizens during the year has been exceptionally good. Contagious diseases on the whole did not exceed a dozen cases. Our sanitary inspector started out in the spring and did good service in seeing that the inhabitants kept their premises free from nuisances according to the Public Health Act.

J. H. C. LEGGATT,
Secretary.

## Brampton.

*Secretary's Report.*

The work of the Board of Health for the year has been very light.

The health of the citizens of the town has been good.

There has been but one case of diphtheria reported.

The sanitary condition of the town is fair, and there has been no trouble of importance in enforcing sanitary rules and regulations.

T. J. BLAIN,
Secretary.

## Barrie.

*Medical Health Officer's Report.*

In submitting report for the year nearly spent, it is a subject for congratulation that greater interest has been manifested by the various members of the Board of Health in its important duties than at any time since its establishment.

The initial stages of sanitary government for towns and urban communities is to a large extent foreign to the experience of those entrusted with its enforcement, and often positively repugnant to the majority of citizens who are called upon to lend their co-operation in the renoval or abatement of some local fault, and to which they themselves are often unwittingly perhaps contributors. Rigidly clean houses may be the rule, but undrained cellars, foul closets and sewage-laden wells are yet not fully estimated by the many. This difficulty the Health Officer has experienced in condemning premises to which his attention was directed as a cause of sickness, sometimes involving their abandonment and landlord rentals for a while until made sanitary. Perhaps owners are apt to look obliquely on grave defects in their own possessions when an outlay is involved without its equivalent in increased rentals. But it is a fact, not singular to Barrie I assume, that the majority of rented houses do not come up to the standard of the present sanitary requirements now very properly made obligatory by provincial legislation through its machinery of Local Boards of Health. Many cellars in this town afford favorable nurseries for endemic disease, and every year this cause will yield its quota involving the stern remedial demands of the Sanitary Inspector, aided by the authority of his superiors in this branch of municipal government. Many of the wells now in use are little better than cesspools for the drainage of all sorts of impurities, aided as they are by gravitation and the nature of the percolating soil. I have examined a number of specimens of water, many of which were comparatively pure, others, however, more than suspicious. With the inauguration of water-works it is reasonable to expect much of this cause of complaint will be removed.

The general health of the town has been fair this year. A few scattered cases of scarlet fever, whooping cough and measles have occurred among children, with no deaths reported Of acute diseases of the respiratory organs, inflammation of the lungs and bronchitis have a marked prominence—14 deaths having been reported. Tubercular and scrofulous diseases register 8 deaths. Typhoid has existed to a limited extent—1 death having been reported up to date. This case resulted in a family where most of its members were stricken by the disease—the original case having been imported from a locality many miles distant from Barrie. It also extended to another family by contact through nursing. As a whole the sanitary condition of our town cannot be charged with a marked accession of sickness, and with the extended sewerage adopted and to be extended the coming season, there is reason to hope for the future a continued exemption from serious endemic outbreaks of disease. A point demanding attention is the existence of foul closets and the necessity for enforcing in certain cases the establishment of earth closets instead. In one case of a public house the well used for all domestic purposes was in a stable—the closet a few feet away—and both about 15 feet from the dwelling. I advised an earth closet and a new well—the latter has been provided but the former still exists. Such facts demonstrate that the Board will in many cases have to act determinedly and place such matters beyond the option of the parties affected. The report of the Sanitary Inspector and Health Officer when adopted by the Board of Health should have the force of law and its executive department made active in carrying it out. A matter that will require attention another year is the enforced drainage of all properties contiguous to the new sewers proposed to be constructed—cases proving the necessity of this having been brought to my notice officially.

The reported number of deaths registered is 52, a death rate of about 10 to the 1,000, which compares flatteringly with the percentage of towns of corresponding size in Ontario. Nature has done much for us as a locality in providing natural gravitation

and drainage (as witness the effects of the floods in June last), and I assume continued efficient work on the part of the Board of Health can make a record for our town that will place it high among the residential sanitariums of the Province.

L. OLIVER, M.D.,
Medical Health Officer.

---

BROCKVILLE.

*Medical Health Officer's Report.*

Our mortality this year was 18 per 1000. Last year it was only 12 per 1000, or in other words disease and accident have carried away of our population 161 this year, whilst last year we only lost 109.

Out of these 161 deaths, only 7 were caused by infectious, or contagious diseases, five being from scarlet fever and two from diptheria.

The two fatal cases of diptheria were directly caused by infected clothing brought across the river, which had been worn by a child there who had died of a malignant type of the disease.

Thorough and energetic measures were at once taken. Three other members of the family were also attacked, but by promptly isolating them in the infectious ward of the General Hospital their lives were saved, and the disease stamped out.

Of Diphtheria we have had 11 cases.....2 deaths.
" Scarlet Fever " " 32 " .....5 "
" Typhoid Fever " " 34 " .....no deaths.

The majority of the cases of Typhoid and Scarlet Fever were mild. Amongst the principal causes of death in the 154 cases were Catarrhal and Pulmonary diseases, accompanying and following " La Grippe," which visited us in the commencement of the year, and from the effect of which many state that they are yet suffering.

Brockville being a comparatively old town, and the privy pit system a time honored institution, its soil has become thoroughly saturated with sewerage; and so long as wells are in use, and the soil constantly disturbed by the laying of sewer pipes, we are not likely to be altogether freed from what are known as preventable diseases, such as typhoid fever, scarlet fever and diphtheria.

Our sewers are, no doubt, of very great service to individuals, but, so far owing to the fact that comparatively few have made connection with them, and still use old drains for sewer purposes, the town as a whole has not benefited to that extent which might have been expected.

I am pleased to be able to report, however, that many abuses of this kind that existed last year have been remedied, and I trust that next year those who still have neglected to avail themselves of our magnificient sewer system will be the exception rather than the rule.

The Public Schools have received a good deal of attention during the year. They have been thoroughly repaired, and the desks and seats properly graded, so as to meet the requirement of the different size of children attending,

The overcrowding of our common schools last year has been remedied by the erection of the Pearl Street West School. This fine building, erected at a cost of about $11,000, thoroughly equipped in every respect and heated, and ventilated, by the Smead & Dowd system, gives accommodation to about 300 pupils.

I believe that never were our schools, from the Collegiate Institute down to the Kindergarten, in a better state of sanitation than they are at the present time.

Owing to our system of isolating all cases of infectious disease there has been no serious epidemic among the children attending the public schools during the year just ended, but I would strongly urge the necessity of enforcing the law relating to vaccination, requiring from each child, attending or entering the schools, a certificate from a regular medical practitioner that vaccination has been successfully performed.

The report of the Sanitary Inspector shows that during the year all yards have been visited, and nuisances removed. Privy pits, which could not be properly cleaned and disinfected, have been ordered to be abolished and earth closets substituted.

Permits to the number of 700 for the cleaning of closets have been issued and the work performed by the contractors in a satisfactory manner. No permits for the digging of new pits have been granted during the year.

That pigs are still allowed by law to be kept inside the limits of the corporation is to be regretted, as it is impossible to keep such a strict supervision of the pens as will prevent them from being a nuisance to the neighborhood in which they are located, and I would urge that the town council be requested to pass a by-law prohibiting the keeping of pigs within the limits of the municipality.

In order that there may be concerted action between the town engineer, the medical officer and the various other executive officers of the town, it is desirable that offices for each in the same building be provided. The different officials could then more frequently consult, and their work be thus harmonised.

HARRY E. VAUX, M.D.,
Medical Health Officer.

---

BOWMANVILLE.

*Secretary's Report.*

There have been ten cases of diphtheria reported by the medical men of the town during the year, three of which proved fatal. There have also been a few cases of typhoid fever, but generally the health of the town has been good.

We have had some trouble to keep the premises of a few persons in a proper sanitary condition, and had to send one person to gaol for refusing to carry out the requirements of the Board.

R. WINDATT,
Secretary.

---

COLLINGWOOD.

*Medical Health Officer's Report.*

In the early part of the year, the epidemic influenza which prevailed all over the world, affected a great many of the inhabitants, although but one case proved fatal, many suffered from after effects. There were three cases of diphtheria, but no deaths. A few cases of scarlet fever in a mild form. Some twenty or twenty-five cases of malarial fever, a few of which shewed decided typhoid symptoms, but no deaths. Towards the close of the hot weather, cholera infantum, as usual made its appearance, but not so many were attacked, nor was it as fatal as in former years.

The deaths during the year were forty-four. Considering the want of drainage and the almost universal use of that abomination the privy pit, the death rate cannot be considered high.

I have several times laid before the council the necessity of making the use of earth closets compulsory in the more thickly populated portions of the town; but so far my advice has been unheeded.

A. R. STEPHEN, M.D.,
Acting Health Officer.

CHATHAM.

*Medical Health Officer's Report.*

I herewith submit my annual report for the year ending November 15th, 1890.

Contagious diseases were reported as follows:—

| | | | |
|---|---|---|---|
| Diphtheria | 28 cases. | Deaths, | 3. |
| Scarlet Fever | 70 " | " | 1. |
| Typhoid Fever | 52 " | " | 4. |

The scarlet fever cases were mostly mild, though the number of cases from May 15th to June 30th were quite alarming, and it was found that they occurred mostly in families having children attending Forest Street school. With the co-operation of Mr. Brackin, the principal, we learned the names of all families represented in the school in which there was sickness of any kind, and no physician in attendance. I then called at all such places and found two houses where the disease was being concealed, one at a green-house where the public went to purchase flowers, the other a house from which milk was sold.

When the Forest street school was closed for mid-summer holidays, the building was thoroughly fumigated by the health inspector, with sulphur, 42 lb. being used, and 1 gallon of alcohol.

A notice was also published in each of the local papers warning the public that scarlatina, scarlet-rash and scarlet fever were all the same disease, and householders having the disease in their houses must report to the health office to avoid the penalty of the law. Since July 1st the cases are fewer, though the disease is still with us.

The total deaths 141, is about the same death-rate as last year, 18 per thousand.

The greatest monthly mortality was in January, 22

The lowest monthly mortality was in October, 5 only. In January many old people died after an attack of "La Grippe."

The sanitary condition of the town is certainly improving, though there are still many chances for bettering it, among which might be mentioned the filling up and doing away with all privy pits. Fourty-four were replaced this year with watertight tanks. The whole number of permits for new closets was sixty-seven.

Hog-pens should be done away with; at present they are allowed if kept 70 feet from any dwelling; but four or five hogs can create a nuisance many hundred feet from a residence. The sewers are very inadequate to the present wants of the town, and during rainstorms several times this summer goods have been destroyed by water backing into cellars, not to mention the filthy and pestilential pest left behind. The sewers should be thoroughly attended to before the water from the waterworks is used, water from which if everything goes well, should be delivered next summer. During the year two houses were condemned as unfit for dwellings, and the stock of one green grocery store destroyed, because infected with scarlet fever.

Two slaughter-houses have been closed during the year, one because within the town limits, and the other because situated too near the highway.

One scavenger was suspended for cause and has since done much better work.

I am happy to state that the physicians in town, without any exception, have done all in their power to assist the officers of the board to carry out the regulations of the "Health Act."

WM. R. HALL,
Medical Health Officer.

---

CORNWALL.

*Medical Health Officer's Report.*

I am happy to be able to congratulate the town for the comparative immunity it has enjoyed during the past year from any epidemic of infectious disease of a serious type. In the early months of spring due notice is given for all places to be ready for inspection by the 20th May. After that date a thorough house to house inspection is begun and

carried to completion by the sanitary police; and every place is put in a thoroughly sanitary condition before the hot months come upon us. All yards, slaughtering-houses, etc., are thus attended to, and no pigs, or slaughtering is permitted within the corporation between the months of May and November.

During the year we have had a few cases of diphtheria, scarlet fever and measles; but none of them have been of a very serious type, and under proper precautions all of them have been easily controlled. I have in every instance attended strictly to placarding, and although meeting with slight resistance at first, now that the reasons for such precautions being taken are more thoroughly understood, I find no difficulty in carrying out the requiremeuts of the law.

There have been one or two isolated cases of typhoid fever of a very mild type; but in no instance, as far as I can learn, have they been attended with fatal results. I attribute our great freedom from this much dreaded disease during the past four years to the wholesome supply of water the town has the good fortune to possess, as before the introduction of our water works system, typhoid fever was one of the most prevalent and fatal diseases at certain seasons of the year we had to contend with.

The system of sewerage inaugurated some three years ago, has yearly been extended, till now many of the principal streets of the town, both business and private, are enjoying the benefits of these comforts.

Acting under instructions from the Board, I have caused all privy vaults in the thickly settled portions of the town to be done away with, thus removing what has been in the hot summer months a very productive cause of disease.

General and thorough inspection of all slaughtering-houses and places where meat is exposed for sale has been carried out, as well as the sources of our milk supply.

I may here specially remark that the Board is thoroughly alive to the absolute necessity of attending to all matters which have for their object the protection of the public health.

The several manufacturing institutions of this place, which employ a large number of operatives, have been thoroughly inspected by the government inspector, and each time the services of the Medical Health Officer have beeu secured during such inspection, thus guaranteeing to the operatives the greatest possible care in sanitary points.

Taking everything into consideration, I consider the town in a very good position from a sanitary point of view, and am glad to be able to report the best of results, owing to the exertions of the Local Board of Health.

C. J. HAMILTON, M.D.,
Medical Health Officer.

---

COBOURG.

*Chairman's Report.*

| | | | | |
|---|---|---|---|---|
| The number of cases of | | | Scarlet Fever were | 49 |
| " | " | " | Diphtheria " | 9 |
| " | " | " | Typhoid Fever " | 6 |

No case of smallpox occurred during the year. The cases of measles and whooping cough heard of were of so uncertain a nature as not to warrant any action being taken in connection therewith by the Board.

The water from 301 wells was tested, or analysed, and in 49 instances it was found to be impure, and the wells ordered to be cleaned out. Two were found to be so bad, the result of their surroundings, that they were ordered to be filled up. At present we consider the water supplied from the town wells to be pure and satisfactory, which is the principal reason why so little pipe water is used from the excellent system of water works in use here.

The creek, or small river running through the centre of the town has been straightened and widened, and is now in a perfectly good sanitary condition.

G. S. HARLEY,
Chairman.

DUNDAS.

*Medical Health Officer's Report.*

During the past twelve months the town has suffered more than usually from infectious disease.

In November last, diphtheria made its appearance, and although all necessary precautions were taken, there occurred altogether 19 cases, three of which resulted fatally. The dwellings at the onset were far apart, and the source of the disease could not be definitely traced.

At the same time scarlet fever broke out, but as the cases were kept thoroughly isolated, only 8 cases occurred, with no deaths.

Measles were epidemic during April and May.

Whooping-cough was also very prevalent during the summer months.

As to typhoid fever there were 21 cases reported, which is much more than the usual number with us, one of which terminated fatally. The source of the disease was no doubt due to unwholesome water and defective sewerage. The well water has been unfit for use for years, and as time goes on it becomes more and more contaminated. In one section of the town where the water is unusually bad, there occurred more cases of typhoid fever than in any other.

We have a water supply which is second to none, the water being obtained from springs on the mountain side, but with the present high and unequal rates, the majority is unable to take advantage of it. Then another difficulty presents itself, and that is the lack of a system of sewerage, which will become necessary.

I would suggest that the milk vendors be compelled to obtain licenses, after having had their premises thoroughly overhauled. With the present system milk may possibly have been a fruitful source of disease.

THOS. W. BERTRAM, M.D.,
Medical Health Officer.

---

GALT.

*Medical Health Officer's Report.*

I have pleasure in reporting a more than average healthy year. With the exception of the epidemics of influenza and measles during January, February and March, the town has been exceptionally free from sickness, especially from contagious diseases, due no doubt in a great measure to the cleanliness of the town. According to mortuary statistics, Galt has a lower death-rate than most Canadian towns.

Very few complaints have been sent in during the year, and the grievances, when any existed, were rectified at once, by giving the offenders notice, and no proceedings were necessary.

The byres, yards and premises of the different milk vendors have been carefully inspected, and found in good condition. Now that a system of water works is being introduced, a system of sewerage is no doubt required in connection therewith, or the health of the citizens will be endangered more than at present.

J. S. WARDLAW, M.D.,
Medical Health Officer.

GODERICH.

*Medical Health Officer's Report.*

Since our last report we have had a very severe type of diphtheria, and of the cases reported but two recovered. It was confined to the members of a few families. The necessary precautions were taken in each case to prevent its spreading. We have also had a number of cases of typhoid fever, fortunately they all recovered. We had but one case of scarlet fever, it not proving fatal. Influenza was very prevalent during the months of January and February, several cases proving fatal; the fatality was particularly in cases of elderly people. It is worthy of note that there were no cases of diphtheria or typhoid fever in families using the town water. The health of the people at present is very good.

ALEX. TAYLOR, M.D.,
Medical Health Officer.

---

INGERSOLL.

*Medical Health Officer's Report.*

I have much pleasure in stating that the mortality is less than last year and decidedly less from those diseases caused by zymotic influence.

The total number of deaths is fifty-seven, and estimating the population at about 5,200 will give 10.9 per thousand, the causes of death are marasmus 1, diphtheria 6, lymphodinitis 1, phthisis pulmonalis 7, accidental 5, pneumonia 3, cappillary bronchitis 2, la grippe 3, cancer 3, influenza 1, malaria with bronchtis 1, pernicious anemia 1, locomotor ataxy 1, tuberculous meningitis 2, still born 3, trismus 1, cerebritis asthma 1, heart disease 3, died suddenly 1, Bright's disease 2, inflamation stomach 1, cholera infantum 3, nephritis 1, paralysis 1, umbilical hemorrhage 1, total 57.

Take from the total number those caused by zymotic influences viz., diphtheria 6, cholera infantum 3, making 9, or about 1.78 per thousand. Our death rate in diphtheria is still large compared with other towns.

I will take the liberty here of referring the Board to clause seventy-seven of the Public Health Act, and to suggest that said clause be rigorously enforced.

It was in disobedience of this clause that diphtheria was introduced in the school last year, with such fatal results, and but a month or so ago one or two cases came under my notice where children were attending school, while inmates of the family were suffering from scarlet fever (these occurred where there was no physician in attendance) and the head of the family neglected to report to our secretary.

I must further draw the attention of the Board to the very lax manner in which the inspection of the town has been carried out as compared with former years. There has been no inspection of the dairies supplying milk, and the vendors have not even been requested to register in accordance with the town by-law. The same can be said of the slaughter-houses. It is however gratifying to know that no complaint has been made against either of the above industries.

In company with the chairman of our Board all of the school buildings were visited, and carefully inspected. They were found in a most satisfactory condition, and speak well for those having the same in charge.

As the water works are nearing completion, and when completed will give the town a plentiful supply of pure water, our Board should urge the town council to take into consideration the necessity of an efficient system of sewerage, and forward their plans to the Provincial Board for their sanction. The town is admirably situated for a most perfect system and no time should be lost in taking the subject into consideration, so that whatever is done, may be of a permanent character.

J. R. WALDIE, M.D.,
Medical Health Officer.

KINCARDINE.

*Medical Health Officer's Report.*

It is with pleasure that I have to inform you that the general health of our people has been good during the year. We have had only two cases of typhoid fever, two of diphteria and twelve of measles, mortality nil, and in all cases the houses were visited and properly placarded. During the year our sanitary inspector has been active in his duties in attending promptly to the removal of anything that might be detrimental to the public health. We have had a great deal of trouble with slaughter-houses and hog nuisances.

N. HOPKINS, M.D.,
Medical Health Officer.

---

MEAFORD.

*Medical Health Officer's Report.*

The public health in this municipality during 1890 has been fairly good with the exception of la grippe from which the public here suffered in common with other places. No severe or general outbreak of any particular disease has occured.

On examination the reports of infectious diseases for the year shows that scarlet fever has occured in a few cases. These cases were sporodic and mild in form, no deaths occurring from this cause.

The la grippe however left many persons in poor health. It is probable that not a small proportion of the deaths which have occurred since the disease visited this section has been traceable directly or indirectly to its influence, or its after effects. These disasterious effects were particularly noticeable in aged persons, and persons who had a latent tendency to consumption or lung trouble appeared to have such tendency developed.

The diseases most prevalent here are rheumatism, neuralgia, and catarrhal affections of the respiratory passages. These are very noticeable in fall and spring, particularly the latter season, and they do not abate till the ice leaves the bay which often does not take place till quite late.

The Board of Health has made several strenuous efforts during the year to induce the town council to pass a by-law compelling all property owners in the town upon whose property any pit closets exist, to have the water-tight box, drawer or dry-earth closet constructed, and the pit cleaned out, disinfected and filled up. Though in many cases the dry earth closet has been constructed still it is not general and compulsory.

The Board hope to accomplish this during the ensuing year and entirely abolish the pit closet nuisance.

C. F. SNELGROVE, M.D.,
Medical Health Officer.

---

MOUNT FOREST.

*Secretary's Report.*

I have much pleasure in stating that although there have been some appearances of malarial and other fevers still they have been few and isolated and the town has been generally in a good healthy state and the inhabitants free from sickness.

We have no medical health officer but a very energetic and active health inspector, who is alway on the alert for anything dangerous to the public health.

I have much pleasure in reporting at the present time that Mount Forest is in a good healthy condition and the citzens are alive to the importance of keeping it in such condition.

W. C. PERRY,
Secretary.

NAPANEE.

*Secretary's Report.*

I have much pleasure in reporting that during the year the general health of the residents of the town has been exceptionally good.

A few cases of typhoid fever and diphtheria were reported, resulting in the recovery of the patients in each case.

The death rate for the year is considerably below the average.

In the month of May the usual means were adopted and carried out under the direction of the Board and an efficient sanitary officer, the removal of all filth, garbage and other accumulations endangering the public health.

A system of water works for the town has been completed and some additional sewers constructed, which it is expected will have the effect of improving the sanitary condition of the municipality.

PHILIP EMBURY,
Secretary.

---

NIAGARA FALLS TOWN.

*Secretary's Report.*

The health of the residents of the town has been good for the past year. We have been free from epidemics and contagious diseases. Nuisances of all kinds have been kept down or removed promptly by the Local Board of Health, with the exception of a nuisance on Simcoe street, caused by the people living in a block of houses on that street draining on to the street and not providing themselves with a proper drain, because the required majority would not sign a petition to put in the required drain.

The nuisance was reported to Dr. Bryce, who attended to the matter, visiting the town, inspecting the premises and making a full report with recommendations to the council.

J. ROBINSON,
Secretary.

---

NORTH TORONTO.

*Chairman's Report.*

We are happy to report that our town at the present time is in a healthy condition, there being very little sickness within its limits.

During the year we have had a few cases of typhoid fever, and one case of diphtheria, but none of a very serious nature.

At our first meeting, we instructed our sanitary inspector to make a thorough inspection of the town which was attended with very satisfactory results, there being only one or two parties' premises where a nuisance existed, who upon being notified attended to the matter promptly.

Our duties since under his watchful eye have not been arduous.

In our opinion, the sanitary condition of our town was never better than at the present time, for which we feel very grateful.

CHAS. ROBERTSON,
Chairman.

OWEN SOUND.

*Medical Health Officer's Report.*

I may state that the health of the town has on the whole been very fair. Infantile diseases have been very prevalent, more especially a mild form of scarlatina. Diphtheria has occasionally made its appearance, but has been kept in check by vigorous measures. Complaints have as usual been numerous, some slight and others of a more serious nature; in all, the difficulties have been satisfactorily arranged with the exceptien of Frost street sewer, which was referred by the town council to the town engineer and the medical health officer to report upon. They found cellars containing water and no convenience for disposing of sink water, the condition being very unfavorable to health. The report strongly recommended sewage sufficient to relieve cellars and remove sink water, not for one moment imagining that a brick sewer would be asked for to carry off an overflow of storm water, which occurs principally in the spring and two or three times to a lesser extent during the rest of the year. Storm water is rather beneficial than otherwise for cleansing the ditch on the roadside. It is to be hoped that our residents will consider the outlay—present and future—and have all pipes laid so as to form part of a future system. Permits have been granted during the year for the construction of pipe sewers on several streets to connect with present mains.

In the month of August the annual meeting of the Executive Health Officers of Ontario was held in the town hall. Many papers of much interest were read and the water supply and other matters of interest to us were fully discussed, the only regret being that a larger number of the residents did not avail themselves of the opportunity to become better acquainted with subjects of so much interest to them.

Wells in various parts of the town have been complained of, but to close them was considered a hardship as water could not have been easily obtained in the neighborhood. The trouble it is hoped will soon find a remedy, as the corporation has obtained control of the water works and are distributing pipes through the populated portion of the town.

The milk supply is creditable to the dairymen, as proved by occassional tests, it is good in quality and rich in fat.

Although appended is a statement of infectious diseases as reported, still we have knowledge that scarlatina, measles and mumps were much more prevalent than this report represents, from the fact that in a large number of cases it was ascertained the mother attended to the treatment of her family.

ALLAN CAMERON, M.D.,
Medical Health Officer.

---

ORANGEVILLE.

*Medical Health Officer's Report.*

I desire to state that the Board of Health, after being duly organized, instructed the inspector to make a very general survey of the town, and to notify all persons to clean up their respective yards and premises. This strict supervision was continued all summer, consequently, as far as possible, all filth and garbage was removed at once. In this connection I may state that great difficulty was experienced in the selection of a place for disposal of above. To obviate this difficulty in future I would suggest that the council purchase an acre or two of low land, have it trenched, into which the garbage and filth could be thrown and covered up, in a sanitary sense, making it as safe as possible in the absence of a better way for its disposal.

Another nuisance, viz., pigs and pig-pens, was a source of considerable trouble and annoyance. However, the council, by and with the advice of the Board of Health, passed a by-law compelling the complete removal of pigs outside of the corporation, with the hope that this nuisance has been most effectually stamped out for all time to come.

Water closets were dealt with in a peremptory manner; the owners were compelled to have them cleaned and thoroughly disinfected, and in the more thickly populated parts of the town the dry-earth system was introduced and is giving satisfactory results. In the future I do hope the above system will be generally enforced and thus avoid soil and water pollution. Thirty or forty samples of water were taken indiscriminately through the town and analyzed, and with three or four exceptions were found to contain more or less organic matter, very detrimental to the health of citizens, and no doubt the cause of the great number of typhoid and diphtheritic cases that were prevalent this year. In this connection permit me to say, that if the inhabitants of this town ever expect to be free from the great excess of above diseases, they must have pure drinking water. Another want just as important (and which must come with a proper system of water works) is the construction of a proper system of drainage to carry off the sewage and assist in draining the earth of its super-saturated poisons that in dry weather is evolved from the ground, breeding sickness and disease, that might be obviated had we a proper system of drainage and plenty of water to flush the same. Notwithstanding the very great efforts put forth by the Council and Board of Health, we have had more than our share of preventable diseases, viz., typhoid fever and diphtheria—as the annexed schedule will show, with three deaths in former and two or three in latter. Scarlet fever of a mild type was more or less prevalent all summer and fall. Measles, and in fact nearly all the infantile diseases, were quite common. The death-rate was high in proportion to population. Quite a few elderly persons succumbed to la grippe or its numerous complications.

In conclusion permit me to impress upon the council and citizens the absolute necessity for pure water and a proper system of drainage.

JAMES HENRY, M.D.,
Medical Health Officer.

---

ORILLIA.

*Medical Health Officer's Report.*

In submitting my report for the year I feel that it is unnecessary to apologize for its brevity, but rather deem it a matter for congratulation that the sanitary condition of the town has been such as to render a lengthy report uncalled for. No cases of scarlet fever nor of measles have been reported to me during the year, and of the few cases of diphtheria and typhoid fever (the two diseases which are in themselves an index to the sanitary condition of a place) nearly all have been imported from outside points. The diphtheria thus introduced was of a rather severe type and caused three deaths out of a total of seven cases. Strict isolation was practised and the trouble spread no further. Of typhoid fever only a very few cases have appeared, and these of mild character. La grippe visited us in the early months of the year, but for a disease so universal and with such severe symptoms and complications, the mortality was very slight. Mumps and whooping cough have also prevailed to a moderate extent, the latter in some instances having been complicated with bronchitis which in one case proved fatal. The sanitary inspector with his assistant made a thorough house to house inspection of the town in April and May, to see that all refuse, garbage, etc., were removed from about the premises, and where any objectionable or unsanitary condition was found, orders were given to have it promptly remedied. In most cases these orders were fairly well responded to. Some low lying lots near Mississaga and Front streets were filled in, thus removing what threatened to be a fruitful source of disease. After inspecting the property of the Grand Trunk Railway Company, lying along the lake front, I wrote to the general superintendent requesting him to have the place put in a good sanitary condition, and received reply stating that the matter would be attended to forthwith. No action, however, has as yet been taken. By order of the board I inspected the old asylum and found the building scrupulously clean and the general sanitary condition good. The health of the inmates (perhaps the best index in the matter) has been particularly good. Not so satis-

factory, however, is the method of disposing of the sewage. This is conveyed from the building by pipes, passing through two settling basins on the way and is emptied into the lake about forty feet from the shore and in a depth of not more than four feet of water. A greasy looking scum could be seen on the surface of the water near this point and for some distance around, and a rather disagreeable smell was also noticeable. I would suggest that the sewage be made to pass through strainers, much finer than those at present used, then through a filter of charcoal or sand and finally that the outlet pipe should be carried out to reach water of a depth of twelve or fourteen feet. This would, I think, remove the most objectionable feature of the present system. A committee deputed by the Provincial Board of Health visited Orillia on July 3rd, and after inspection reported on the questions of further water supply for the town, the new cesspool at the high school, and other matters on which therefore it will be unnecessary for me to remark.

A. R. HARVIE, M.D.
Medical Health Officer.

---

PICTON.

*Medical Health Officer's Report.*

I have the honor to report that the general sanitary condition of the town is excellent.

There have been two or three cases of typhoid fever (endemic) of a mild type, from which all have recovered.

A few cases of malarial fever have come under my notice, but cases of this description are becoming rare.

By far the worst kind of disease we have had to contend with is the grippe, in common with the rest of the world. In some few cases it proved fatal, and in others has left its mark. It is a disease over which we have no control as to its invasion, for it defies all methods of quarantine and travels with frightful rapidity through the air. The old and debilitated seem to be its favorite victims, and past experience will advise these to be aware of its coming and applying remedies without fail.

My recommendation as to the establishment of a nuisance deposit ground has not received the attention of the town council that its importance demands. It is to be hoped that this necessity will meet with immediate attention.

It is an alarming fact that few of the children under five or six years of age have been vaccinated, and that if an epidemic of smallpox should invade our town it would find us ill prepared to resist it.

HENRY B. EVANS, M.D.,
Medical Health Officer.

---

PETERBORO'.

*Medical Health Officer's Report.*

In presenting my seventh annual report I would congratulate you on the greater interest in health matters manifested during the year on the part of the Board as shewn by their more frequent meetings; on the vast amount of sanitary work performed, far in excess of any preceding year; on the low and still decreasing death rate, and on the remarkable freedom of the town from infectious disease. On the part of the public, too, there are many gratifying indications that sanitary matters are gradually assuming their proper importance. There is a greater solicitude as to the purity of the water drunk as evinced by the increasing number of analyses made each year, a more cheerful compliance with health regulations, and, as naturally follows, a greater sensitiveness by people as to their neighbor's sanitary faults, and a correspondingly increased number of complaints. In fact, the public are beginning to demand proper health precautions just as they demand

good streets or good fire protection. When Boards of Health were first organized, sweeping measures were passed, but were found unworkable in the unprepared state of public opinion. Some years of reaction came during which it was hard to get a quorum of the members. That indifference is now at an end, and we may expect to see the Board in future holding its proper place and performing its proper functions, neither too aggressive nor two apathetic, discussing sanitary requirements in an intelligent manner and passing measures in accordance with that public health sense which it is its duty both to develop and to satisfy.

*Death Rate.*—This is the sanitary thermometer, indicating precisely by its rise or fall the efficiency of health operations. In 1890 the record is again broken, for we have a still further decrease from the low rate of 1889. In the latter year, with a population of 9,302, there were 124 deaths. In 1890, with a population of 9,337, their was only 120 deaths, or 12.85 to the thousand, a rate which, when returns come in from other places, we may safely predict as being almost the lowest, if not the lowest, in the Dominion. It cannot be too often mentioned that since sanitary work began, the death rate has declined from 19 per thousand (not a high rate) to the present, and that this decrease has not been spasmodic or accidental, but step by step. The causes unquestionably are: Removal of garbage and excreta (2,500 barrels of the latter, it is estimated, were carted away during the year); isolation and disinfection in contagious diseases, thus limiting their number; greater care as to purity of water drunk; and a more general attention to cleanliness and other hygenic requirements.

*Infectious Diseases.*—Two deaths from typhoid fever constitute the total mortality from this cause, apart from the epidemic of influenza which swept over the country in the earlier part of the year, and which was due to sanitary negligence in other quarters of the world. A few cases of diphtheria and scarlet fever have occurred but none have been fatal, and in no case has the disease spread. Science is constantly giving us more powerful disinfectants, and it is to be hoped that these diseases may soon be driven out of existence. Some complaints have been made as to members of families engaging in their ordinary avocations while other membes are laid up with some infectious disease. Discretion has to be exercised in such cases. Children in the same house are always prohibited from attending school and, as far as possible, from associating with other children, but we have not considered it either necessary or advisable to keep the father of the family from attending to his duties as bread-winner. A few ordinary precautions have, so far, sufficed to prevent any disease from spreading in this way.

Synopsis of sanitary work done during the year:—

| | |
|---|---|
| Number of notices served | 827 |
| " of yards examined | 1,032 |
| " of water closets | 1,260 |
| " of yards found in good condition | 205 |
| " of yards ordered to be cleaned | 827 |
| " of manure heaps removed | 51 |
| " of hog pens removed | 26 |
| " of dead and animals burned | 65 |
| " of analyses of water | 115 |

*Infectious Diseases.*

| | |
|---|---|
| Typhoid fever | 6 |
| Scarlet fever | 32 |
| Diphtheria | 3 |
| Houses placarded | 19 |

*Slaughter Houses.*—On this question matters reached a climax during the year. Last winter a new slaughter house having been established at the southern part of the town without permission from the Board, residents in that locality urged the removal of

all slaughter houses, and even communicated with the Provincial Board on the subject. Such strong pressure was made, numerous influential deputations making vigorous representations of the nuisance, that the Board found it necessary to withdraw permission from all slaughter houses within the corporation. The town council has asked that enforcement of this resolution be postponed until March, and by that month the last slaughter house will have been removed from the town. This will be much better for all parties concerned. Butchers will have time to get other places where they will feel secure and be free from annoyance, and their present neighbors will be rid of places which, although kept under the best management, can hardly be other than nuisanses. Frequent inspections have been made during the year, and although strenuous efforts have been made to keep things passable, the wet season has made it very difficult.

*Removal of Garbage and Excreta*.—This has been carried out to a far greater extent than ever before. The clause relating to the cleaning of privy-vaults has been pretty thoroughly enforced. Competition haa reduced the price of such work, but the employment of a public scavenger in the near future will fill a long felt want and be one of the most important sanitary measures ever enacted. When this functionary begins his duties there will be no inducement whatever to conceal filth or refuse of any kind. On the contrary it will be bronght out or gathered up so that it may be carried away.

*Earth Closets*.—These can hardly be said to have been a success in general, owing to the attention required in cleaning them, but with the assistance of a public scavenger there will be no trouble whatever. A by-law has recently been passed by the council to the effect that all privy-vaults and cesspools in the central parts of the town shall be closed by the 1st of May next, and earth closets substituted therefor. This is an excellent measure, and it will be your officer's duty to see that it is properly carried out. In the absence of sewerage it is almost all that could be devised. The next point is to have a cheap and easily worked closet, and no doubt some carpenter will be found equal to the occasion.

*Purity of Water Supply*.—It having been rumored that there was considerable contamination by sewage of the river above the waterworks, in accordance with a motion of the Board, I examined the river banks in company with the Chief of Police, as far as Nassau on both sides of the river. We found not more than a dozen places where there was any contamination whatever, and in these the amount was very small. To allay the fears of the public it should be remembered that a small amount of sewage may be discharged into a large body of water without polluting it for more than a few yards. The matter is soon oxidised, or chemically acted upon by the water, and thus loses its dangerous propensities. Of course if the amount of sewage is large and the stream small there is very much risk. As to the purity of the well water a very large number of specimens have been sent in for analysis, and I have found them of varying degrees of purity. Speaking generally, I find far less organic matter now than in past years, and this is what might be expected from the removal of contaminating material.

*The Ice Question*.—Some alarm was created by the suggestion that as a certain amount of sewage was discharged into the Little Lake, the supply of ice must be impure and dangerous to the public health. I examined one sample of melted ice sent me and found it so impure that I suspected some impurity in the jar, or a mistake somewhere. At the request of the Board I sent a sample to Dr. Bryce. The result was published and did not indicate any very great impurity, especially that which causes disease. I examined several pieces subsequently and found them reasonably pure. I have not heard of any cases of disease caused by it, but I will continue examining it from time to time as suggested by the Provincial Board.

*House to House Inspection*.—A very large amount of work has been done by the chief and sanitary inspector and very many notices served. These notices are, as a rule, promptly attended to, very few caring to go into court for sanitary neglect. One of the principal causes of complaint is from throwing slops about to the annoyance of neighbors. It is hard to rectify this in the absence of sewerage, and the evil may be increased somewhat by the operation of the new by-law, as under present circumstances the vault is

often made a receptacle for everything. Fortunately in the majority of cases the practice is more an eyesore than a sanitary danger, and even in the latter case can easily be remedied by disinfectants.

A few other matters require notice. I have frequently been applied to by parties taking houses for an opinion as to their sanitary condition and freedom from taint of disease. This can only be done in a general way, for germs are too minute to be detected easily. If there have been no complaints about a house, if it has been thoroughly disinfected after infectious disease, if the water is good and ordinary sanitary measures have been in use, the house may be pronounced habitable from that point of view, but that is all that can be said. No one can guarantee freedom from malarial or similar poison. As to the milk supply there have been no complaints, so that it may be assumed that the people of Peterborough get a fairly good article. The water supplied to the schools has always been found good, although doubts have been expressed by parties as to the purity of some of the wells. I have been spoken to also about the sanitary effect of the large piles of sawdust accumulating here and there, on account of the mill-owners being prohibited from depositing it in the river. I do not think that their mere presence is dangerous to people living in the vicinity. This is a different matter from being deposited in the Little Lake. Of course when the masses begin to decay, should houses be built upon them, there would be some risk to the occupants. In other parts of Canada many cases of typhoid fever have originated from that cause. At present, however, there is nothing to fear. I have also been asked to urge the importance of having fowl drawn before being brought to market. But there is a difference of opinion on this subject. Some who buy in quantities for storing state that they keep better undrawn, so further consideration is necessary. The supply of meat brought to market is usually in good condition. It has very rarely been necessary to forbid the sale of meat on sanitary grounds. On the whole we have much reason to be gratified with the condition of the town from a sanitary point of view. It is one which should invite the attention of manufacturers and others desiring location or place of residence, and in the hope that it may be maintained.

J. CLARKE, M.D.,
Medical Health Officer.

PORT HOPE.

*Secretary's Report.*

I respectfully beg to report that the Local Board of Health was not required to meet for 1890, no sickness having occurred requiring them to do so.

The medical health officer informs me that he has nothing to report. The Board of Health had only one case of sickness reported to it, which was said to be diphtheria. The matter was immediately attended to—the house placarded and every precaution taken, and no further intimation was given nor any knowledge of the result, at all events no death.

H. V. SAUNDERS,
Secretary.

PORT ARTHUR.

*Medical Health Officer's Report.*

My predecessor, T. S. Smellie, Esq., M.D., before leaving here left me one document or slip reporting a case of scarlatina, the only case occurring up to the time of his departure. Since my appointment two cases of chicken-pox and one case of scarlatina have been reported, and none following leads me to infer that this year will be without epidemics or contagious diseases.

A very few cases of typhoid fever have been treated in the hospital, but none had their origin in the town of Port Arthur. They came from the outlying district of Silver Mountain, two proving fatal.

I visited the public schools and all the classes, and my report must be that all was correct.

J. A. MACDONELL, M.D.,
Medical Health Officer.

PETROLIA.

*Medical Health Officer's Report.*

Thanks no doubt are due, in a very great measure, to the indefatigable efforts of the present Board of Health and inspector for the present very satisfactory condition of the public health of the town. So far this season we have enjoyed almost perfect immunity from disease of a serious character. I have no knowledge of a single case of fever of any consequence having occurred, quite a marked contrast to other years in this particular.

The water supply, which after all is the most important feature in preserving the good health of the people, is still very inefficient, but has on the whole given better results than on other occasions. I have been enabled to examine samples every few weeks all summer and with a few notable exceptions the results have been quite satisfactory. Once in a while we have come across some unfit for use and these wells have been promptly placarded. I would once more urge upon our board the necessity of systematically doing away with the privy vaults, perhaps not by one swoop but by districts. It is a pity to see these relics of a barbarous age going down in the newly settled part of the town; why not commence the reformation here?

As far as I can understand no steps have been taken yet to compel the refineries to consume the escaping gas from the condensers. This is a burning subject and one that should be kept prominently in view, for it is my firm belief that our citizens are being slowly but surely poisoned from this source. No better opportunity ever offered itself for the Boaad of Health to immortalize itself than on this very question. Since our last report the great trunk sewer has materialised itself in such a way as to lead to the hope that before another season is over it will be doing grand service for the community. This is as it should be. If another season would show a similar stand on the privy vault question we would soon have a very Eldorado in our midst.

G. D. LOUGHEED,
Medical Health Officer.

---

PARIS.

*Medical Health Officer's Report.*

I have the honor to submit as my report for the present year the following:—Speaking generally of the health of the town I would say that it has been good. The mortality has been 36, being at the rate of 11.2 per 1,000, as compared with a mortality during the previous year of 38, being 11.8 per 1,000 of inhabitants. The mortality this year, I think I may safely say, has largely resulted, directly or indirectly, from causes due to the prevalence of the recent epidemic known as la grippe; and can, therefore, hardly be taken as indicating the actual sanitary condition of the town; which I may pronounce as excellent, more particularly since the removal of the slaughter house from within the limits of the municipality, and which was effected not without strong opposition on the part of the owners and lessees. The existence of these slaughter houses has been a nuisance for a number of years, and a source of worry and annoyance both to the local Board of Health, which body has unsuccessfully sought to compel their removal until the present year. I may say of the town of Paris that naturally its situation is favorable from a sanitary point of view. It boasts natural drainage, the soil and sub-strata being of a dry and porus nature. An admirable system of waterworks, and which is being year by year more generally availed of for domestic purposes, is another advantage which the town enjoys. The water has been pronounced by Dr. Carpenter, a very high scientific authority, as perhaps the finest he had ever tested in this country. The people of the community have to be congratulated on these facts. But further than this they can take credit to themselves for the maintenance of a generally cleanly condition of their respective premises as revealed by the report of the Sanitary Inspector.

The existence of the privy-pit system cannot be noted with satisfaction. The adoption of a complete system of sewerage is probably beyond the financial capacity of a town of the size and status of Paris, and, more especially, when the problem of the disposition of sewage presents itself does the question appear perplexing and beset with difficulties. But yet, pending the solution of this problem of how cheaply and efficiently to construct sewerage and get rid of sewage, a more general resort to earth closets would be decidedly in the interest of the sanitary well being of the town. On this subject I would add that the plan proposed for the disposal of the sewage from the Bradford House, viz., that of carrying it by drain into the Grand River, may be expedient but is by no means desirable. Of infectious diseases there have been very few and only one death therefrom, typhoid fever being the cause of death and the disease was contracted in Toronto. The number of cases of typhoid was six; of scarlet fever, none; of measles, four; of diphtheria, 11.

D. DUNTON, M.D.,
Medical Health Officer.

---

PEMBROKE.

*Medical Health Officer's Report.*

*Contagious Diseases.*—We have experienced no severe epidemics of contagious diseases, but the following have been reported, viz.: 27 cases of scarlet fever, three deaths; seven cases of diphtheria, two deaths. Isolation, placarding and effective methods of disinfection were usually adopted and contributed largely to prevent the spread of these diseases.

There have been also several cases of typhoid fever, measles and whooping cough in our midst, but it has not been the practice to report any of these systematically, consequently I cannot give the figures. I would suggest that physicians, and others of whom the law requires reports of contagious diseases coming to their knowledge, be notified of their duty in this connection and required to conform with the regulations in the future, though placarding is not regarded as necessary in the case of other than scarlet fever, diphtheria and smallpox.

*Births and Deaths.*—The population of the town as last taken was about 4,500. The births during the year have been 156 and the deaths 77, being about one death to two birhs; and showing a mortality of about 17 per thousand, which is a favorable proportion in the absence of perfect drainage. The death-rate was doubtless somewhat augmented by reason of the epidemic of la grippe which prevailed so generally in the early months of the year.

*Vaccination.*—I have again to direct your attention to the absolute neglect of vaccination in the municipality. During the last four years I do not think there have been half a dozen persons vaccinated in the town, a condition of things altogether blameworthy. While it is not within the powers of the Board of Health to compel vaccination, yet something could be done to direct the attention of the citizens to it from time to time and to urge upon them the necessity for attending to this precaution regularly.

*Privy Vaults.*—Action was taken relative to the closing of privy pits, and as you are aware somewhat stringent resolutions were passed by the board, but it was not thought advisable during the first year to press them too strongly. The result, however, so far has been to cause a large number to adopt the dry earth system and the matter will be carried out more fully hereafter.

*Removal of Garbage.*—A dumping ground was secured, about the 1st of May, outside the limits of the corporation, to which all refuse and other garbage was carted, or these were destroyed on the premises by fire, where that could be done with safety and without inconveniencing anyone, the result being that yards and premises were kept in

a fairly good condition throughout the year, and the streets of the town have also been kept cleaner than in the past.

*Ice Supply.*—I was called upon during the "ice harvesting" to inspect the ice being cut and to determine a point in the lake where it would be safe to take the supply from. There were four different parties engaged in cutting and furnishing ice to the citizens, all of whom, with one exception, I found cutting good ice. I notified the men who were cutting what seemed to be impure ice to move out to a point indicated by me, which they promptly did, and afterwards the supply furnished was unobjectionable.

*Drainage.*—I beg to draw the attention of the board again to the danger which threatens from the practice of putting water closets in houses now being built and connecting them with box drains, many of which are the outlets from cellars without traps or other protection from sewer gas. In no case should a water closet be connected with box drains and particularly where the same box drains has an open connection with neighboring houses. The matter of drainage is one which is most urgently demanding the attention of the corporation and cannot be too earnestly considered in relation to the health of the community.

W. W. DICKSON, M.D.,
Medical Health Officer.

---

STRATHROY.

*Medical Health Officer's Report.*

I have great pleasure in stating, and it must be gratifying to you also to learn that the health of the town is in a more satisfactory condition than at any previous period of its history since the Health Act came in force. This is no doubt owing in a great measure to the increased efforts of the Board, and the work of an efficient sanitary inspector, who early in the season attended to the cleaning and clearing out of all water closets, manure pits, cellars, wells and slaughter houses, where their condition demanded it for the preservation and safety of the public health. During the year 593 privy vaults have been thoroughly cleaned and disinfected, the contents removed and deposited on the grounds appointed for the purpose, in trenches deodorized with ashes or lime, and then covered with earth, yet it seems difficult to get grounds sufficiently isolated, even with the above precautions, so as not to be considered a nuisance by those living in the immediate vicinity. It would be well also for the board to consider the advisability in the future of making arrangements for the removal of the night soil in daytime, in air tight odorless barrels or boxes, which would render the work less loathsome and noxious, and the labor could be very much more efficiently performed. Our town until the present year has been very incompletely drained, but that is now being remedied as rapidly as possible, some $2,000 having been spent on the construction of sewers and drains, one on Front street from Thomas to Caradoc streets, and another from Maitland to English streets, about 3,000 feet in all, which, with some little yet to be done, will leave our town comparatively well drained for some time to come.

So you will see from what has been stated that the town has made noteworthy progress in sanitary matters this year under its competent board, nobly aided by the engineer and road committee, and supported by the whole council. The result of the whole matter gives a much lower death-rate than usual. In a population of about 3,500 only twelve deaths have been registered as belonging to the town limits, a little less than 3.5 in the 1,000. I doubt if any other city or town in Ontario can compare with us in that respect. We have only two or three cases of typhoid early in the year, and none the last six months, very few cases of measles or scarlet fever and none of diphtheria, while in the surrounding towns and country fever has been quite prevalent, if reports are correct, noticeably so in some of the larger cities. There seems to be more attention paid by individuals of late in keeping their places orderly and clean, so that should an epidemic visit the place our sufferings will be much less on account of the strict observation of the laws relating to health.

G. HENDERSON, M.D.,
Medical Health Officer.

SANDWICH.

*Medical Health Officer's Report.*

I am glad to be able to report the absence of any serious outbreak of epidemic diseases during the year. The general health of the community has been fairly good. During the summer we had a few isolated cases of measles, but they did not amount to an epidemic. I am happy to say there were no fatal cases. Our santitary inspector has not complained to me of any nuisances during the year. If so they would have been immediately attended to.

W. D. QUARRY, M.D.,
Medical Health Officer.

---

SEAFORTH.

*Medical Health Officer's Report.*

As I was only appointed health officer about five months ago, on account of my predecessor leaving the town, I cannot speak so postively for the whole year as I can for the past six months. During my term of office there have been a few cases of typhoid fever, of a mild type, there are still one or two cases in town now, but there is no particular danger of it spreading, as the Board of Health are very active in taking precautions against any spread of contagious disease. There is, also, at present, in mild form whooping cough and mumps, but none of them have proved fatal. From my experience of the sanitary condition of Seaforth, would say in comparison with other towns in the surrounding neighborhood, we will compare very favorably. For the population of the town, the death-rate has been very low.

ALEX. BETHUNE, M.D.,
Medical Health Officer.

---

SIMCOE.

*Medical Health Officer's Report.*

The past year has been an unusually healthy one and no epidemics have prevailed. There have been a few isolated cases of diphtheria, measles and scarlet fever, but none of them of obtained an epidemic form. In fact I may say that for some years past our town has been improving from a sanitary point of view. The improvement of the pond, the construction of sewers and the enforcement of the Health Act have all aided in procuring this desirable state of things. During the past year in my capacity as gaol surgeon, as well as that of medical health officer, I made a very strong report about the unsanitary condition of our gaol and county buildings. The result has been the construction of a sewer on Peel street. I also inspected the cellars of all the buildings on Peel street and found them in a very bad condition, stagnant water several inches deep standing in all of them. The construction of the above-mentioned sewer will, no doubt, drain all these premises. I would suggest to your board the desirability of introducing generally throughout the town the dry earth system of closets. I know of quite a number and they are giving great satisfaction. You can quite understand how injurious to health it must be to have a privy vault and well within a few feet of each other. This state of affairs can be seen in very many yards in our town. If the dry earth closet here were made compulsory generally it would still further add to our already healthy town. I think our town as it is will compare favorably with the best in Ontario, but I would still like to see it in the front rank from a sanitary point of view.

JAS. HAYES, M.D.,
Medical Health Officer.

## Trenton.

*Health Officer's Report.*

The health of the town has on the whole been satisfactory during the past year, though in the winter months, owing to the prevalance of "la grippe," a good deal of sickness and suffering was experienced, and the mortality during that period was high. Many aged and enfeebled patients succumbing either to the immediate or remote influence of this disease. A similar increase in the death-rate will no doubt be reported throughout the province from the same cause. The deaths from ordinary causes however, have been fewer than in any year since my first report. No deaths from diphtheria have been reported, and no epidemic except the influenza has visited us. Even the infantile diarrhœa of summer was much less severe than in former years. I trust that this last is in part, at least, due the improved quality of our milk supply, as the inspector has been actively looking into the purity of that aliment as it was being distributed from the waggons and depots.

The street committee in early spring cleaned the streets and lanes by thoroughly scraping and removing the winter's accumulation of mud and garbage, leaving to the board of health the task of keeping up good appearances for the remainder of the season, which they did as best they could with the limited means at their disposal. But as a scavenger's cart has not yet been provided the removals were irregular and spasmodic. The lanes in the rear of stores received some attention, and these neglected places which are covered with a profusion of broken boxes, waste wrappings, straw, etc., should receive particular attention as a protection against incipient fires.

Although the board, so far as I am aware, has not been consulted, it is known that the council has under consideration a scheme of waterworks, and it is to be hoped that a system of sewerage may receive attention at the same time.

The inspector has collected samples of the water from many wells for analysis, and I particularly draw the attention of the board to one, viz., the tank on King St., which supplies the west ward school and neighborhood, as being unfit for use. As this is the property of the corporation, I advise that the pipes should be uncovered and moved to a higher level. The present pipe enters the supply on the street just below the school closets, and the loose nature of the soil makes contamination inevitable. A case of low fever in one of the pupils first called attention to this matter.

The health inspector's report is sent herewith. Two complete rounds of house to house inspection are reported, the first beginning on May 1st, and the second on July 1st.

On the first visit 45 yards, 50 closets and 40 pig-sties were reported as in a filthy condition, as well as 15 sties built too near dwellings. Most of these were attended to before his second visit. The "pig-sties too near dwellings" are again coming into prominence, and I have advised a vigorous adherence to the regulation distance. Every effort is being made to insure that stables and livery barns are kept clean and the manure regularly and completely removed,

The greatest difficulty is met with in enforcing cleanliness in regard to closets, especially is this the case in tenement houses, where the inmates are continually moving and avoiding their responsibilities.

A very little effort on the part of each household would greatly enhance the health and comfort of all.

The veterinary surgeon's report on the health, etc., of the cows of the licensed dairymen supplying milk to the municipality, as well as the condition of the byres, yards and water supply, has already been presented to you. In the case of those whose wells are too near the byre it would be wise to withhold license until a purer water supply has been provided.

The market square had not up to this season been sprinkled by the watering cart, and consequently the meat, butter, etc., exposed for sale on windy days often received showers of dust not often free from disease germs. I recommended the thorough watering of the square on market mornings, and trust the same will be continued next season. The waste from farmers' waggons such as the tops of vegetables, and from butchers and

hucksters' stalls, not to mention the business dodgers that litter the ground when the day's market is over present a picture of dirt and confusion not to be tolerated, and I have asked that these be daily burnt or removed. The market lessee scarcely feels called upon to undertake the labor. His responsibility should be fixed by agreement with the council, or the market committee undertake it themselves. Much credit is due to the inspector for such a measure of cleanliness, as his efforts have secured, but much still remains to be desired.

In the large hotels an insufficiency of dry earth closets was reported, and in one case, at least, this led to the erection of a large well ventilated building for this purpose, an important matter to guests where the buildings are unconnected with sewers.

The death rate for the year was 15.2 per thousand of the population, which, although perhaps not above the average is certainly not as low as some larger municipalities in the province, nor may we expect much decrease till a complete system of waterworks and sewerage shall have been established.

CHAS. McLELLAN, M.D.,
Medical Health Officer.

---

TILSONBURG.

*Medical Health Officer's Report.*

I beg to report that the health of the town has very much improved during the past year owing to the adoption of the dry earth system.

There were a few cases of typhoid fever during the year, one of which terminated fatally. There were also a few mild cases of diphtheria, but owing to the prompt measures taken for its suppression it did not assume an epidemic form.

C. M. McDONALD, M.D.,
Medical Health Officer.

---

WHITBY.

*Secretary's Report.*

I am pleased to be able to state that the general health of all residents of the town for the past year has been good.

There has been very little sickness of any kind. Only one case of contagious disease scarlet fever, which did not prove fatal, was reported.

THOS. HUSTON,
Secretary.

---

WINGHAM.

*Secretary's Report.*

Owing to the absence in our town during the year of any contagious or infectious diseases, and no complaints of any kind being brought to the notice of the Board, our health officers have had little or no work to perform. Our inspector early in the spring made a tour of inspection of back yards and other places suspected of uncleanliness and where he deemed it necessary gave instructions to the occupants which we have reason to believe were fully carried out.

In speaking of the absence of disease I do not include La Grippe ; we have had our share of this fellow and very few escaped his clutches. Two, one a woman about 40 years of age, the other a man about the same age succumbed to the disease.

The mill-pond nuisance that I wrote so much about before, I am glad to say is somewhat improved, in fact so much so that the Board does not at the present time entertain any serious apprehensions regarding its sanitary conditions.

The county council granted $150, and the municipal council of Wingham $210 towards removing the debris. I think we are in a fair way now to have the nuisance completly removed.

We do not now fear any trouble on account of the sanitary condition of the town.

J. B. FERGUSON,
Secretary.

---

WATERLOO.

*Medical Health Officer's Report.*

In presenting my report for the past year, while I can safely say that there have been some improvements in the sanitary condition of the town over previous years at the same time its condition falls far short of what should exist in any civilized community. The death-rate has not been high. We have been comparatively free from contagious diseases excepting diphtheria of which there has been about twenty cases. Owing to the prompt action of the board of health the disease was confined to half a dozen houses. Of scarlet fever and measles there have been no cases and a very small number of cases of typhoid fever. Early in the season there was made an inspection of the town from house to house, and a general cleaning up was ordered, and in many cases satisfactorily performed. In some instances the owners of privy vaults were urged to substitute for them dry earth closets, but I am sorry to say very little progress has yet been made in that direction. In view of the great danger to health from that source of disease, in the absence of a regular system of sewerage, I believe it would become the duty of the council in the near future to pass a by-law compelling the change that has been advised.

I would recommend that early in the spring of next year a more thorough inspection than heretofore be made of all premises, including yards, store-houses, cellars, stables, factories, etc., and that they be put in a proper sanitary condition before warm weather sets in ; and every owner of a well should be reminded that the law requires that all wells be cleaned before the first day of July in each year.

In conclusion I would suggest, as a means of materially assisting in the improvement of the sanitary condition of the town, that circulars or pamphlets be circulated amongst our citizens instructing them in those sanitary matters most important for their welfare.

J. H. WEBB, M.D.
Medical Health Officer.

---

WATERLOO.

*Chairman's Report.*

I beg on behalf of the board, to state for your information, that although some progress has been made during the past summer in sanitary matters, very much remains yet to be done before it can be said that the public health has been safeguarded to the extent which the most approved methods of sanitation urgently demand. The efforts of those entrusted with the responsible duty of protecting the health of our citizens from the inroads of contagious diseases should be endorsed not only by an enlightened public opinion, but

also by the active co-operation and support of the municipal authorities, without which it is almost impossible for any board of health to accomplish much-needed and permanent reforms.

In the public interests our Board considered it advisable to put into operation, in certain cases, the provisions of the provincial act—1st. In the case of diphtheria, referred to by the medical health officer, with the result, as we have reason to believe, of preventing the spread of that dreaded disease; secondly. In the case of filthy pigsties in the hope of minimizing that too general nuisance as far at least as practicable in view of the persistent opposition to our regulations from a large number of the ratepayers; and thirdly, In the case of privy vaults, in order to introduce in the absence of any system of sewerage, the adoption of dry earth closets, which under proper regulations will, we are convinced, do much to remove a fruitful source of disease, especially in the more densely populated portions of the town.

Touching the hog nuisance we have found that the seventy feet limit provided by statute does not in a majority of cases work satisfactorily. Even where the regulations of the board have been carried out in some respects, from the defective construction of pens the openings in the floors admit of an offensive deposit underneath and in many instances the cleansing and disinfecting have been but crudely performed, if at all. Another much complained of nuisance is the erection of piggeries in close proximity to the most frequented sidewalks, though over the regulation feet from dwellings, making life almost unendurable to passers by. Our Board regrets to state that many ratepayers use every means in their power to conceal the presence of pigs on their premises, and when obliged to comply with the law, consider that their rights are being invaded by the officers of the board. In view of the above facts, and others which must have come under your own observation, the board of health recommends the passage of a by-law prohibiting the keeping of hogs within the boundaries of the corporation and ordering that before they can be lawfully kept within the municipality a permit be obtained for that purpose from the board of health.

While the necessity of such a by-law must be obvious to every ratepayer who has given the matter his serious consideration, our board would further beg to call the attention of the council to the many dangers to the public health which exist in our midst growing out of, and inseparable from, the entire absence in our town of any system of sewerage and as the population increases these dangers must from year to year necessarily give just grounds for grave concern to every ratepayer and resident of Waterloo who sets a proper value on the blessings of good health. The sanitary condition of the town cannot be secured unless the means exist of disposing of sewage in a manner that will not imperil the public health. The existing state of things should not be allowed to continue if the growth of the town and the exemption of its citizens from the ravages of dangerous diseases come within the province of your public duties.

Our Board would therefore respectfully urge the importance of adopting and carrying to an early completion some well approved and effective system of sewerage, for submission to and approval of the ratepayers. In the meantime we recommend your council to consider the advisability of introducing the system of dry earth closets which has been found to work satisfactory in many neighbouring towns, and making their use compulsory. As a rule the condition of privies as at present existing is a constant menace to the public health.

W. WELLS,
Chairman.

---

## Walkerton.

### *Medical Health Officer's Report.*

I have to congratulate the citizens of Walkerton on the extreme rarity of diseases of an infectious character during the year. True, in the beginning of the year our citizens n common with those residing in every other part of the world, I might say, suffered a

good deal from the epidemic of influenza which passed over the continent at that time, but I think even that disease was less severe in this town than in many other places, as I do not know of a single death happening as a direct result of la grippe. Since the above mentioned disease ceased, the health of the town has been very good. The board was notified of only one case of diphtheria during the year. There has been a complete absence of continued fevers during the past summer and fall, and when a few scattered cases of measles of a mild type occurring in the early part of the summer are mentioned the bill of sickness is complete.

The board of health has by a vigorous effort succeeded in having the privy pits in the more thickly inhabited portions of the town replaced by dry earth closets; which I think a very proper and salutary change, particularly for a town situated as ours is, where the ground water comes so near the surface of the soil. Whether this change is responsible for the absence of typhoid fever is a question which will have to be answered in the future.

The attention of the board was called in the early part of the summer to the presence of nuisances in the shape of filthy yards, etc., which were disposed of satisfactorily.

Our town council, headed by its able and energetic chief officer, has successfully carried a by-law for the purpose of providing a system of waterworks not only for fire protection, but also for the purpose of providing a plentiful supply of pure water for domestic use, which latter intention when carried to completion will, I think, assist very materially in improving the sanitary condition of the town.

In conclusion I may say that during the whole year I think that there has been less than the usual amount of sickness.

R. T. PORTER, M.D.,
Medical Health Officer.

---

West Toronto Junction.

*Medical Health Officer's Report.*

In presenting my annual report for the year 1890, I have much pleasure in saying that the sanitary condition of the town is in a very satisfactory state.

In the earlier months of the year our town received a visitation of "la grippe" which although it appeared at first in a comparatively mild form yet quickly seemed to develop into a severe epidemic, a number of deaths from bronchitis, and pneumonia resulting.

During the course of the year typhoid fever, diphtheria, scarlet fever, whooping cough and measles have existed to a variable extent, there having been 5 deaths from typhoid fever, 2 from diphtheria, and 1 from scarlet fever.

I would again impress upon the board the necessity of filling in all wells on the line of streets on which water mains are laid, as a considerable number of cases of typhoid fever have been traceable to the use of water from contaminated wells.

The scavengering department which has been inaugurated during the course of the year has been a very satisfactory experiment. The arrangement for the removal of night soil has again been carried out in a similar manner to last year, and until such a time as a system of sewerage is established I would advise the continuance of the present plan.

The cow-byres and dairymens' premises have been periodically inspected and in every case reported to be in a good condition.

In making a comparison of the death-rate of our town for the present year with that of the principal towns of the province for the year 1889, I find the average death-rate to have been 14.3 per 1,000, while that of West Toronto Junction has been but 5.6 per 1,000, which with one exception is the lowest death-rate of any town in the province of a similar population while the percentage of deaths from zymotic diseases has been but 1.6 per 1,000.

This is certainly gratifying to all concerned and too much praise cannot be awarded o the local board of health for its rigid observance of the public health act.

G. W. CLENDENAN, M.D.,
Medical Health Officer.

WINDSOR.

*Medical Health Officer's Report.*

Windsor has passed through another year of comparative immunity from contagious diseases, and the death-rate from all causes is lower than last year.

There were reported to this Board 30 cases of scarlet fever with one death, and 12 cases of diphtheria and four deaths; three deaths are reported from typhoid fever, two of which were qualified as typho-malarial fever in the death certificate.

From November 15th, 1889, to November 15th, 1890, there has been 142 deaths. This gives an annual death rate of 13.48 per 1,000 of the population as against 14.11 last year. Considering the very great amount of sickness last winter, this is an excellent shewing, and speaks volumes for Windsor's salubrious climate.

The sewerage of the town has made satisfactory progress since my last report. $5\frac{3}{4}$ miles of sewers have been added during the year, which makes a total sewerage of $14\frac{1}{8}$ miles, and 3,360 feet more is under process of construction. The sewer outlets are imperfect, and require the adoption of some method whereby their discharge will be hastened during high water in the river.

It is absolutely necessary that a more satisfactory arrangement be made between the Board of Health and the Board of Works, to compel parties living on sewered streets to connect their premises with the sewers.

The farce of building sewers at great expense and not using them is highly culpable from either an economic or sanitary standpoint.

A considerable addition to the cedar block pavement has been made this year, which adds greatly to the comfort of the inhabitants; but the public would do well to note the rapid decay it undergoes, and consider whether it would be better to subject the blocks to some kind of preservative treatment before laying them, or to try a more durable material. Five and one quarter miles of cedar block pavement have been laid since 1884. Some of the blocks laid during the last four years are in an advanced state of decay, and the emanations from rotten wood are not conducive to the public health.

In the same connection I am under the necessity of again calling attention to the wooden sidewalks, with the concealed spaces under them, containing foul air and filth of all descriptions. The sodding on either side is level with the top of the plank, and in many cases higher, thereby excluding fresh air and converting the hollow space into a stagnant pool of water. Surely when the Board of Health has called attention to the matter so often, the Board of Works should make some effort to abate the nuisance.

Two and one-third miles of water main have been put in this year, making a total of 23 miles, to the great convenience and improvement of health in outlying parts of the town. The danger of contamination of our water supply is still increasing, and during the warm weather of last summer, my attention was directed to a bed of tangle-weed extending from the outlet of the Walkerville sewers to the Windsor water intake. These weeds arrest the refuse matter from the distillery and sewers, and when disturbed by passing steamers, give off their odors, become detached and get into our water main.

I addressed the council on the subject last September, and a joint committee of the council, water commissioners and board of Health visited the locality.

This committee asked the Walkerville council to meet and co-operate with them with the view of constructing an intercepting sewer, but the latter insisted on their legal right to use the river for sewerage purposes, and no satisfactory arrangements were come to. Mr. McPhillips, C.E., was asked to take the levels, and I understand he is ready to report.

It will not do to temporize with this matter and to urge that Windsor is healthy and the death-rate low. We must not wait till a deadly sewerage plague has devastated the town in order to give us data for complaint. Town sewerage, the refuse from the distillery and the chemical works, and the overflow from the cattle barns, are some of the polutions emptied into the river within three-quarters of a mile of our own water intake. So long as Walkerville was a small hamlet and unsewered, we could put up with the comparatively harmless debris finding its way into the river. But neither the laws of God or man will compel us to drink the sewerage of twelve or fifteen hundred people.

The slaughter-house on McDougall street has been removed to a point more remote from the town and into another municipality, but not sufficiently far away to banish the unsavory emantions which arise from it.

The worst nuisance in town exists at its very centre. Within a radius of 200 feet, which space includes the post office, customs house and other government offices, as well as many residences, there are eight horse barns, having a total number of 174 stalls. Nearly all of these are undrained, that is, the liquid manure passes through the floors and oozes out at the lowest corner of the premises. This has rendered the air of that part of the town offensive and deleterious to the inhabitants, and the question is now shall this state of things be dealt with in a summary manner, or shall the locality be abandoned to the exclusive use of the horse. The elements may be trusted to take care of the effluvia arising from a limited admixture of men and horses, but when the latter are in the majority, and the premises are neglected, ammonia takes the place of oxygen, to the great detriment of health.

As the matter involves the business arrangements of a considerable number of people, it is well to discuss it freely before taking action.

With a view to controlling and regulating the milk supply, the board of health requested the council to give an additional grant of $100 to procure the necessary appliances for the examination of milk, and the council cheerfully complied with the request. As there was no accommodation in the town hall, the Dominion government kindly permitted me to use a room in the weights and measure department, but it was found to be in such an unsanitary condition I have been unable to occupy it..

In October I made a simultaneous collection of 36 samples of milk. The average amount of butter fat in these was 3.66 per cent. The lowest was 2.75 per cent. and the highest was 5.00 per cent. The commercial value of the lowest would be $3\frac{3}{4}$ cents, and the highest nearly $6\frac{3}{4}$ cents. A by-law is now before the council licensing milk dealers, and requiring of them a standard quality of milk.

The school accommodation of Windsor is now in a satisfactory condition. Of the 11 public schools six are supplied with Smead-Dowd system of heating and ventilation, and three of the old ones will be condemned as unfit for use. The seating capacity of the three new schools built this year is 600. The buildings are of the most approved plans, and they are seated and equipped with all modern appliances.

JOHN COVENTRY, M.D.,
Medical Health Officer.

---

WOODSTOCK.

*Medical Health Officer's Report.*

Few meetings were held during the year, but our officers consulted with the chairman and members of the Board on all important matters, and had their hearty co-operation, the utmost harmony prevailing.

Early in the year, circulars containing the more important provisions of the Medical Health Act were distributed to every householder, the sanitary inspector, making a house to house inspection, and instructing the citizens on the importance of correct sanitary habits.

We are pleased to inform you that almost every citizen assisted our board and officers in their very responsible and arduous duties, the result of which, together with the abundant rain-fall, rendering the wells less deleterious. The town has been comparatively healthy during the year.

A few sporadic cases of diphtheria, typhoid and scarlet fevers, also measles, appeared in our midst, but by proper sanitary regulations and the hearty co-operation of our medical men, they soon disappeared.

The mortality during the year has been comparatively low, the greater number of deaths being amongst the very aged and young.

One hundred and twenty-six privy vaults outside the dry earth limits have been cleaned out and filled up, and these vaults will soon be a thing of the past.

About 600 dry earth closets are now in use, most of them are cleaned out monthly.

We had some difficulty in getting the citizens to use sufficient dry earth, but hope to be more successful in the future.

The water in 250 wells has been tested, many found unfit for use. 350 have been cleaned out during the year.

Two informations have been laid before the police magistrate for infraction of the health act, a conviction being obtained in one.

We have paid special attention to the quality of milk sold during the year, and are pleased to inform you that it was of a higher grade than usual, none coming below the government minimum.

We cannot congratulate you on the cleaning out and filling up of Close's Ponds, or in extending the mouth of the sewer at the west end, both of which as they now exist are a source of danger to the citizens.

We would draw your attention to the importance of the enlargement of our system of sewers, especially along the northern part of the town.

We congratulate you on the passing of the water by-law, believing that when an abundant supply of pure water for domestic purposes is introduced the health of the town will be exceptionally good.

ARCHIBALD McLAY, M.D.,
Medical Health Officer.

# VILLAGES.

## Alliston.

*Secretary's Report.*

The year just closed has been, in a sanitary sense, a fortunate one for Alliston. There have been but very few deaths, two of which are traceable to malarial fever accompanied with symptoms of typhoid. There were grave apprehensions for a time entertained regarding the public health, owing to the existence of quite a few cases of this disease. Happily all traces of this, or any other type of disease of a contagious character, have disappeared from our midst, and I have much pleasure in reporting there is not a known case of sickness in Alliston, of anything like a serious character at the present time.

The sanitary inspector has made frequent visits to the slaughter-houses and butchers stalls throughout the year, and informs me that the occupants have taken every suggested precaution to keep their premises in a praiseworthy condition of cleanliness.

J. C. HART,
Secretary.

## Arnprior.

*Chairman's Report.*

During the past year, with the exception of "la grippe," we have not suffered from an epidemic, in our usually healthy village. We had some cases of typhoid fever, with one death.

The Board of Health has tried to instil principles of hygiene into the inhabitants of our village, with quite a salutary effect.

For the better protection of health in the rising and future generations, it would be well to teach the first principles of hygiene in *all* our schools, as impressions taken in youth are more lasting than those taken later in life.

A. ARMSTRONG, M.D.,
Chairman.

## Alexandria.

*Medical Health Officer's Report.*

During the past year there was only one case laid before the Board of a nuisance in our village and that one of a minor character. The municipality was very free from contagious diseases. No cases of diphtheria have been reported, and only three cases of typhoid fever, all of which made a good recovery. The necessary precautions were taken to prevent the spread of the disease and undoubtedly they had their effect in so doing. I am pleased to state, at present we are free from all contagious diseases and that the section is in a good sanitary condition.

O. H. McDONALD,
Medical Health Officer.

ASHBURNHAM.

*Medical Health Officer's Report.*

In presenting my report for the year, I have again to congratulate the village on a remarkably low death rate—12½ to the thousand—not so low as that of last year, which was exceptional, but low enough to justify the assertion then made that Ashburnham is one of the healthiest villages in the Dominion. A few cases of so-called infectious diseases have occurred, but none have been fatal, and in every case by means of isolation and disinfection has the disease been limited to the house in which it appeared. Four or five cases of malaria, or typhoid fever occurred, but in two of them the disease was brought from a distance, so that the number of cases, though small, is misleading as to the sanitary condition of the village. I would point out here what I have not yet noticed in connection with health precautions, that when these are effectually carried out, not only is the number of cases lessened, but the severity of each case is greatly mitigated. This confirms the observation of bacteriologists that a concentration of infection adds to its violence, while attenuated, or rather scantily distributed, virus loses half its violence.

Evolution is none the less a force among the lower organisms than among the higher. The greater crowding, the greater the struggle for existence, and in consequence the greater force is developed, the stronger bacterial forms surviving and the weaker going to the wall. Hence sanitary measures make a double attack both upon centre and upon flank, reducing the numbers as well as diminishing the vitality of the enemy.

The principal points to which your officer's attention has been directed during the year are the following:—

SLAUGHTER-HOUSES.

At a meeting of the Board last March to consider the applications of butchers for the year, a motion was passed refusing permission to one to continue operations in the village, and granting it to the others only on condition that no pigs were kept at or in connection with the slaughter houses from 1st November to 1st April. The objectionable one was soon removed, but some of the other owners attempted to evade the resolution by moving their pens to a considerable distance from the slaughter house. Of course, this was an improvement, but did not in every case do away with the nuisance, as some very bitter complaints have still been sent in. The only proper way is to deal with each slaughter house on its own basis. Some are so situated that no complaint is ever heard about them, pigs or no pigs. But those in thickly inhabited places are totally different, and the Board has power to deal with each case on its own merits.

REMOVAL OF GARBAGE AND EXCRETA.

This is always one of the most perplexing sanitary questions and gave considerable trouble last year. It is sometimes hard to find out whose business it is to clear away certain rubbish or empty certain closets. The duties of landlord and tenant are not clearly defined in the Health Act. The employment of a public scavenger by the town will soon be recognized as so beneficial that it is hoped the system will be introduced here or an arrangement made with the town scavenger. In that event there could be no hesitation in insisting upon the introduction of earth-closets. The Board of Health should take an active interest in this question as it is not likely sewerage will be established here for some time.

HOUSE TO HOUSE INSPECTION.

These have been attended to by the sanitary inspector and on several occasions I accompanied him on his rounds. The slaughter-houses were, as a rule, found in good condition. A certain number of pig-pens make their appearance annually and have to be weeded out. Some yards are invariably dirty and untidy unless looked after, and a good many outhouses and closets would not be cleaned unless notices were served.

BURIAL OF ANIMALS.

Two horses having been killed on the railway track, in the hurry of the moment were buried near by in the very centre of the village. When my attention was directed to it putrefaction had set in so that it was too late to have them removed. This should not be allowed to happen again. A small animal may be buried anywhere without much risk, but large masses of decaying animal matter constitute a danger which should be avoided. Recent scientific researches have demonstrated that some of the most destructive poisons are generated by the decomposition of large carcases, and that these retain their vitality for years and may produce diphtheria, typhoid fever, or other dangerous diseases, without anyone dreaming where they come from.

COMPLAINTS.

Many complaints of all kinds have been sent in, and we have endeavored to rectify abuses as much as possible. Sometimes this is very difficult. Suppose a tenant finds his cellar containing water during the greater part of the year. Naturally he is apt to consider it unhealthy, and if illness occur in his family he is sure to consider it so. He makes a complaint and thinks it is the duty of the health officer to compel his landlord to drain it away. So in the case of stables too near neighbors' houses. There is no doubt these are sometimes a very great nuisance while being positively detrimental to health, and an attempt to force their removal might result awkwardly for all parties concerned, in the present crude state of the health laws. It ought to be remembered that these are of recent introduction and by no means perfect. The Legislature is constantly making changes in accordance with the progress of public opinion. We can do more now than we were able to do a few years, and we shall be able to do more soon than we can now.

ANALYSIS OF WATER.

A number of specimens were sent in and examined, with varying results. There is this to be said about well water, that the greater cleanliness above ground the purer the water supply in the vicinity. The rule is invariable.

MILK SUPPLY.

Two specimens were sent in which were supposed to be not up to the average. I found one so much watered that I sent a note to the person who sold it which had a salutary effect. As the analysis of milk is a complicated process requiring special training and no arrangement has been made by the Board of Health here or in town I can make only a superficial examination. As so few complaints are made I believe the quality of milk supplied to be generally good.

DISINFECTANTS.

The use of these is growing from year to year and nothing can be of greater importance. Cleaning away filth is only one part of the work. Closets and cesspools should be thoroughly disinfected at intervals as well.

Wells are not cleaned out as often as necessary. This part of sanitary work is so easily evaded, that it is perhaps less attended to than any other. I have the public school in much better condition than former years, and the hospital is also in good sanitary condition.

There is very much work to be done this spring. As the village extends and becomes more thickly settled, greater and more constant care is necessary, and it will be your officer's duty to carry out the various requirements of the statute as fully as possible.

J. CLARKE, M. D.,
Medical Health Officer.

AILSA CRAIG.

*Secretary's Report.*

I have pleasure reporting that the health of this municipality for the year has been exceptionally good. During the year there has been one case only of contagious disease, typhoid, and the patient has fully recovered.

In accordance with the custom of this Board for some years past, every privy vault and cesspool in this village was, in early spring, cleaned out and disinfected and the contents removed to a suitable place without the municipality, and the Board would call attention to the marked improvement in the general health of the inhabitants ever since this annual cleansing, etc., was first adopted in 1885.

E. B. SMITH,
Secretary.

---

ARKONA.

*Medical Health Officer's Report.*

I have much pleasure in stating that our village during year has been exceptionally healthy. Outside of la grippe we have had no epidemic of any kind.

There has been no typhoid fever, neither have there been any other contagious diseases.

It gives me much satisfaction in stating that the sanitary conditions of our village are most complete.

W. J. TEASDALL, M.D.
Medical Health Officer.

---

ALVINSTON.

*Medical Health Officer's Report.*

I have the pleasure to report that the health of the people has been fully up to the average standard during the year. In the early part of the year the general epidemic of influenza made its appearance. Although nearly the whole population suffered, no deaths accrued from this cause. A mild form of scarlatina prevailed throughout almost the whole year, causing one death. The sanitary condition of the village is fairly good.

A. MACKINNON, M.D.,
Medical Health Officer.

---

BLENHEIM.

*Medical Health Officer's Report.*

We had but one epidemic during the past year, viz, la grippe. There were a few deaths directly traceable to it, and many of those who were affected by it have not had as good health since.

Six cases of typhoid fever occurred during the year, with two deaths, one from inflammation of the membranes of the brain, as a complication, and the other from hemmorrhage into the bowels. There is at present one case in town. In each case the excreta were carefully disinfected and buried and no epidemic occurred. In no case could the cause be traced to the town supply of water.

There were two cases of diphtheria in January ; both recovered.
There have been no cases of measles during the past year.
Whooping cough was quite prevalent, but no deaths occurred.
There were no cases of scarlet fever in town in 1890.

Considerable work was done by the Board of Health in endeavouring to enforce the dry earth system of closets, but without complete success, as many refused to comply with the by-law unless forced to do so.

I would advise that the by-law be vigorously enforced this year, as otherwise the town supply of water will in a very few years be so polluted as to be unfit for use.

A. M. SHAVER, M.D.,
Medical Health Officer.

---

BRUSSELS.

*Secretary's Report.*

I have to report that the sanitary condition of Brussels for 1890 has been good. The inspector as usual made a thorough inspection and had all yards, lanes, etc., cleaned up as soon as the weather permitted in the spring. There have been no infectious diseases reported nor any typhoid or diphtheria, in fact the health of the village has been exceedingly good. In the first part of the year there was considerable la grippe, but no fatal cases.

F. S. SCOTT,
Secretary.

---

BELLE RIVER.

*Medical Health Officer's Report.*

It is gratifying to know that although diphtheria has been prevalent in our village during the present year, it has been confined to only four cases, only one of which proved fatal. I must say that I am very thankful to the Local Board of Health for the efficient manner in which they have acted towards suppressing the spread of this disease in due time, by having properly placarded the houses in which this most contagious disease prevailed.

It is also satisfactory to learn that although typhoid fever which is so generally known to be prevalent throughout this country especially during the months of September, October and November, has proved to be very light, having been limited to only four in number, none of which proved to be fatal. Thanks again to the close vigilance of our Local Board of Health, who knowing the proximity of our village to the pure water of the lake, strongly urged the community at large to make use of that water instead of the water contained in contaminated wells.

Two cases of cerebro spinal fever, or meningitis have been reported, only one of which has proved fatal. It is also encouraging for me to be able to state that no epidemic has broken out except a few cases of measles and whooping cough, none of which proved to be serious enough to be fatal.

Believing that the co-operation and close vigilance of our Local Board of Health towards keeping the streets and wells in a clean and proper condition, will diminish the different zymotic diseases considerably year after year.

D. BECHARD, M.D.,
Medical Health Officer.

BOLTON.

*Sanitary Inspector's Report.*

In the month of May I visited the slaughter-houses in the village and notified some of the owners thereof of the necessity for cleanliness, and keeping said houses in a sanitary condition.

In June and July I again visited said slaughter-houses and found them clean and in good order, and the premises thereunto belonging.

At different times during said months I visited taverns and premises adjoining private premises, and with very few exceptions found them clean and free from decaying or offensive matter.

On my second visit I found said premises clean and in a good sanitary condition.

Some few light cases of la grippe occurred but with no fatal results. Also three cases (imported) of typhoid fever, one from Toronto and the others a short distance from the village. One only terminated fatally.

The village has been free from any contagious disease, and the health of the inhabitants has been generally good.

S. A. WALFORD,
Sanitary Inspector.

---

BRACEBRIDGE.

*Medical Health Officer's Report.*

I have the honor to report that the health of the town for this year has been exceptionally good.

Early in the year there were a number of cases of measles, but of a mild character, and attended with no fatal results.

There has only been two cases of typhoid fever, one imported from Huntsville and the other of local origin. Recovery took place in both cases.

The immunity from contagious diseases is due largely to the active measures taken by our Board, and should encourage it to persevere with its good work.

SAMUEL BRIDGLAND, M.D.,
Medical Health Officer.

---

BEAVERTON.

*Medical Health Officer's Report.*

Very few deaths have occurred, and only one from infectious disease. This happy state of affairs is no doubt due to the action of the Board at different times in improving the sanitary condition of the village. The infectious diseases that have occurred were measles in a mild form, and a few cases of typhoid fever in rather an aggravated form. In endeavouring to ascertain the cause of typhoid we sent several specimens of water to Toronto for bacteriological examination which showed that several of our water supplies are badly contaminated. However, the examinations are not completed—fresh specimens being sent in. When we get the final returns our sanitary inspector will act accordingly. We must thank our inspector, Mr. Brain, who has done very effective work, making from house to house inspection. We learn from his report that so far as outhouses, etc., are concerned, the village is in a very sanitary condition.

A. GRANT, M.D.,
Medical Health Officer.

BOLTON.

*Medical Health Officer's Report.*

I may say that the health of the people of the village has been so good that the Board has not deemed it fit to meet together but once during the year.

We have had no typhoid fever, diphtheria, or scarlet fever in this corporation during the year, except a case of typhoid imported from Toronto. However, it was so isolated that the disease did not spread beyond the person attacked.

La Grippe visited us during the year, and it made its influence felt in all quarters, but although no deaths were reported from it yet, some of those attacked made a lingering recovery.

In conclusion I would report that the hygienic condition of the village of Bolton is as nearly perfect as possible.

R. L. STEWART, M.D.,
Medical Health Officer.

---

BLYTH.

*Medical Health Officer's Report.*

This village has been singularly free from any serious attacks of disease, with the exception of la grippe, during the past year. The death rate is still beneath the Provincial average. The Board of Health is properly organized, and no complaints requiring official action have come before it during the current year.

WILLIAM SLOAN, M.D.,
Medical Health Officer.

---

CREEMORE.

*Secretary's Report.*

We have had comparative freedom from contagious diseases, there having been only two cases of typhoid fever during the year, and both cases were contracted away from here.

We had considerable difficulty with a slaughter house nuisance, but have it arranged satisfactory now.

Our village has always been noted for being a healthy one, and it has continued so for the past year.

R. M. RICHMOND,
Secretary.

---

CARDINAL.

*Medical Health Officer's Report.*

I am pleased to report that we have again been blessed by freedom from any epidemic. There were a few cases of typhoid fever this fall in our village, but that has all died out, there being none now to my knowledge.

I would again draw the attention of the Board to the very unsatisfactory condition of some hog-pens in our midst. It is a disgrace to our community to allow the present state of affairs to exist and a greater shame to our Board.

DUNCAN GOW, M.D.,
Medical Health Officer.

### Chesley.

*Medical Health Officer's Report.*

Owing to a mild and open winter, with very sudden changes of temperature in February and March we had an epidemic of influenza or la grippe, which caused a larger mortality than usual, the old and weak not being able to resist it. Otherwise our village has been remarkably clear of disease. We have had no cases of typhoid, diphtheria, or scarlet fever. Our village is newly built, and the inhabitants take a pride in keeping it fresh and clean, and attend to sanitary instructions strictly. We are also favored with a rapid running stream through the centre of the village, and with an absence of malaria in this section, renders Chesley one of the healthiest villages in the Dominion.

GEORGE COOKE, M.D.,
Medical Health Officer.

---

### Dunnville.

*Secretary's Report.*

In presenting the report for the year, we are pleased to congratulate the residents on the absence of contagious diseases, and to say our municipality is entirely free of such, not a case being reported. We are happy to say that the medical profession heartily concur in the necessity of reporting contagious diseases, which they do with a promptness that is very commendable. We have frequently urged the advantages of dry earth closets instead of vaults which are a prolific source of contamination to wells by soakage, from which the drinking and other water is obtained for domestic purposes. The number put in use this year is far in excess of any previous year, and as the advantages of them becomes known they will be more appreciated, and eventually will take the place of vaults. Although we have frequently requested the council to pass a by-law to suppress vaults they so far do not feel inclined to interfere, and any improvements in this direction have been done by the free will of the people. The council has given our citizens the advantage of several good sewers and have inaugurated a system which, if continued for a few years, will still more increase our sanitary advantages. The death rate still continues very low. The total cases of infectious diseases reported were five, all being diphtheria, with one death.

J. W. HOLMES,
Secretary.

---

### Dresden.

*Secretary's Report.*

There have been six cases of contagious diseases reported during the year, viz. : Four typhoid fever, one diptheria, and one of measles. None fatal.

A qantitity of tile draining has been done by the council this season, which will materially aid the sanitary condition of the town.

At present the town is in a healthy condition.

JOHN CHAPPLE,
Secretary.

DUNDALK.

*Secretary's Report.*

The Board was organized and did efficient work. The sanitary condition of the village was better than for some time and very little sickness occurred. The measures taken early in the spring were very effective in preventing disease.

T. HALL,
Secretary.

EMBRO.

*Medical Health Officer's Report.*

We have enjoyed not to say total but a very happy immunity from contagious diseases this year.

La Grippe which at the beginning of the year raged the whole country, and from which so many deaths resulted elsewhere, carried off but one victim from Embro.

In the early spring a case of diphtheria, evidently imported from Woodstock, broke out. By strict sanitation, isolation, and the cordial co-operation of the family the disease did not extend beyond the one case, which made a good recovery.

In September measles was contracted by a visitor from Toronto evidently on the journey by rail from that city. In this case the Board of Health and Medical Health Officer instituted no quarantine, believing that would transcend their statutory authority. The disease did not spread, however, to any great extent and no fatalities from that cause are reported.

The death-rate has been exceptionally low, three in all are recorded ; about one-half of one per cent. of the total population. The causes of death are la grippe, 1 ; heart disease, 1 ; old age, 1. Not one from recognized preventable cause.

The sanitary condition of the municipality is on the whole satisfactory. The ordinance for the dry earth disinfection of night soil is very generally observed. The same may be said of the other sanitary regulations prescribed by the Board.

The depth of the water-bearing strata from which our water supply is drawn has, so far, aided by careful embankment of the mouths of the wells, prevented their contamination by surface drainage or percolation to any appreciable extent.

There is now no slaughter house within the corporation, and I have had no complaints from the township from that cause.

The milk supply is all from private dairies and the quality of the milk is so satisfactory that no inspection has been deemed necessary. The disposal of stable manure dnring the summer months again challenges the attention of our Board. This question presents two rather serious phases, practically involving the right to keep cows and horses at all in the closely built portions of the village on the one hand, on the other the right of residents to protection from noisome exhalations, which, however unavoidable, are offensive to most people and exceedingly deleterious to invalids By the advice of the Provincial Board of Health I have recommended as a compromise that manure in close proximity and to westward of dwellings be confined in air-tight pits with a tubular ventilator extending above the adjacent windows or roofs.

J. ROSS, M.D.,
Medical Health Officer

EXETER.

*Secretary's Report.*

We have the honor to report that the sanitary condition of this village has been good throughout the year. At the beginning of the summer the council at your

suggestion, and the request of the Local Board of Health secured 12-inch sewer pipe and placed them under the bottom of the open creek running through the village, which had the effect of completely removing the nuisance heretofore in existence, and which was a continual source of annoyance, and we believe of disease.

The butchers from whom the fresh meat supply of this village is obtained, were more than ordinarily careful of the sanitary condition of their slaughter houses during the summer and consequently no trouble arose from that quarter.

We are glad to be able to report that there has not been a case of contagious disease in the village during the year.

M. EACRETT,
Secretary.

---

ESSEX CENTRE.

*Medical Health Officer's Report.*

It gives me pleasure that I am able to make a very favorable report of the health of the population of this town during the past year.

We have not had an epidemic of any kind except la grippe, which was severe in some cases, but no deaths resulting therefrom, which result may be considered due to the mild climate of this part of Ontario.

Although threatened by an epidemic of smallpox there was no increase of cases from the single one which existed at the outer limits of the town.

The small amount of endemic diseases during the year is largely due to the unusual rainfall, which was especially great during the months which are usually dry, keeping the surface wells full and diluting the poisonous material at the bottom of the wells.

As pure water is a desideratum and is absolutely necessary to good health, I would urge upon our board of health and the town council the necessity of planning and constructing a system of water-works which will enable every person to obtain a plentiful supply of wholesome water.

The ponds used as reservoirs by the factories and mills should be attended to and kept in a sanitary condition. They should be cleaned out and when the water becomes foul should be pumped out and replaced by water from artesian wells or other sources.

The drainage system should be extended on those streets built up where the pipes empty into open ditches.

E. PROWSE, M.D.,
Medical Health Officer.

---

FOREST.

*Medical Health Officer's Report.*

Beyond three cases of scarlet fever and two of diphtheria, all of mild types, no other cases of contagious diseases have been reported. The above cases were promptly quarantined, with the result of stamping out the diseases.

As regards closets, a great improvement is shown since last year. I would urge the advisibility of adopting earth closets more generally throughout the town, as many privy vaults are in close proximity to wells, the water of which is used for drinking.

I would also call most serious attention to the practice of keeping cows and

hens in the most thickly settled parts of the town, and I urge that steps should be taken for their removal. I reported the cases brought under my notice, and I regret no steps were taken for the removal of these nuisances.

The town is, at present time, free from infectious diseases.

WALTER BOYD, M.D.,
Medical Health Officer.

---

GLENCOE.

*Secretary's Report.*

I am pleased to be able to state that the sanitary condition of our village during the past year has been, upon the whole, satisfactory and the general health of our citizens good.

In April our board issued a notice, through the columns of our local paper, requiring all privies and closets in the village to be properly cleaned by the 15th day of May, and requesting that every back yard should be thoroughly cleansed from filth and rubbish. These instructions were with a few exceptions promptly complied with.

During the year we have had two cases of typhoid fever (one of which proved fatal) and one case of scarlatina. Prompt measures were taken to prevent the spread of these diseases, in consequence of which they were confined to the two families in which they originated.

There have also been a few cases of measles brought in from the country by children attending the high school. These were promptly looked after and, with the exception of reducing the attendance at the school for a time, no serious consequences arose.

GEO. M. HAINSON,
Secretary.

---

GRIMSBY.

*Medical Health Officer's Report.*

The year opened with an epidemic of "la grippe." Few persons escaped a more or less severe attack of this disease. The mortality rate of this locality was exceedingly low. Later on several cases of both measles and scarlet fever were reported; these were fortunately of a mild type. Houses were duly placarded, and all possible precautions taken to isolate the patients. The Board of Health finds considerable difficulty in obtaining the co-operation of the heads of families in which contagious diseases exist to assist in preventing, by keeping the other members of their families at home, and restraining them from attending public gatherings, such as church services, Sunday schools, concerts, etc., and also otherwise generally mixing with the public until after the stage of scaling off has passed, and the clothing, etc., perfectly disinfected.

House to house visits were made by the inspector in the spring and early summer and occupants notified to remove or burn all rubbish, etc., and clean out all wells where two years had elapsed since a former cleaning.

Complaint by letter was made against the deposit and accumulation of sawdust on the public street and lot adjoining the sawmill north of the Grand Trunk railway. The Board, acting on the opinion of the Provincial Board of

Health, ordered the removal of this heap of decaying sawdust, it being injurious to the public health. Complaint was also made (by letter) against the filling up of a gully on a private lot with rubbish and rotten timber. Similar action was taken in this case.

The Board of Health was asked to report on the site proposed for a cemetery. A resolution was passed to the effect that the site was suitable from a sanitary point of view.

Before closing, I may say that the latter half of this year has shown a remarkably small percentage of sickness in this municipality. Low fevers, such as typhoid, we very seldom have. This may be taken up to a certain point as an index of the sanitary condition of a place.

A young man suffering from malignant diphtheria was brought here from a Michigan lumber camp. This case proved fatal. The disease attacked two other inmates of this house, which was so small that it was impossible to properly isolate the first case. These latter made good recoveries, and the disease did not spread.

R. A. ALEXANDER, M.D.,
Medical Health Officer.

---

HASTINGS.

*Secretary's Report.*

I beg leave to report that the sanitary condition of this village is good. Drainage is and has been in a good condition all the year. The inspector has made his regular visits of inspection.

JOHN SHARPE,
Secretary.

---

HAGERSVILLE.

*Medical Health Officer's Report.*

There were no contagious diseases in Hagersville during the year except la grippe, which was of a mild type, with no fatal cases. Several foul ditches were inspected and ordered cleaned.

T. H. QUANCY, M.D.,
Medical Health Officer.

---

HARRISTON.

*Secretary's Report.*

An aggressive policy which the board intended to adopt during the year was outlined by the chairman, its chief feature was the doing away with pits in water closets and substituting drawers therefor, but owing, presumably, to there being very little sickness and no epidemic or contagious disease of any kind breaking out in the town during the year the scheme was not put into force.

Ten deaths were registered during the year, as against 14 in 1889. The ages of those registered are as follows, viz.: Under 1 year, 1; from 1 to 10 years,

2; from 10 to 20 years, 1; from 20 to 30 years, 1; from 30 to 40 years, 1; from 60 to 70 years, 2; from 70 to 80 years, 1; over 80 years, 1. The causes of death were as follows: Inflammation, 1; meningitis, 1; diphtheria, 1; la grippe, 1; decline, 2; general debility and old age, 2; congestion of the brain, 1; acute bronchitis, 1.

Estimating the population of the town at 1,800 the death-rate is less than 6 per 1,000, which is a remarkably low average, and speaks well for its sanitary condition.

A. J. STEWART,
Secretary.

---

LUCAN.

*Medical Health Officer's Report.*

In regard to the general health, we have been unusually free from the diseases incident to the summer, such as cholera infantum, dysentery, etc.

As to infectious diseases, we have just passed through what almost became an epidemic of scarlet fever. The first case that came under my notice occurred in May last. Since that date thirteen cases have been reported, confined to six families. I have every reason to believe that as many have not been reported, which accounts for the dread disease still lingering in our midst. Also one case of diphtheria.

All of the cases that were reported to me were properly isolated, the houses placarded and the proper disinfection used.

I am pleased to be able to state that there have been no deaths from contagious diseases during the year, all the cases suffering from scarlet fever, so far as I know, are now convalescent. I believe if the same vigilance is continued and that the Board insist on the requirements of the law being carried out, and have all cases of contagious diseases promptly reported, we will not have much trouble in banishing all such from our village.

I believe the Sanitary Inspector has discharged his duties in a satisfactory manner, examined the various closets and hog-pens and had them put in proper condition.

T. HOSSACK, M.D.
Medical Health Officer.

---

LANARK.

*Secretary's Report.*

We have not had a death during 1890 from any contagious disease, nor for the past three years, except an infant from whooping cough.

Our Sanitary Inspector makes his tour of inspection in the spring of each year, inspecting yards and places, giving orders for the removal and cleaning of anything necessary. Our village is, however, so very clean and consequently healthy that the dormant qualities of our Board have never been called into action except on one occasion, some years since, when scarlet fever was introduced here by a non-resident.

W. A. FIELD,
Secretary.

LEAMINGTON.

*Medical Health Officer's Report.*

During the past year the town has enjoyed immunity from all contagious forms of fever. A very few cases of malarial fever and those of a mild remittent type occurred during the summer.

During the early spring measles and whooping-cough prevailed throughout the town. No cases of diphtheria were reported.

The after effects of la grippe on many constitutions is still a cause of frequent complaint, though there were no deaths from it while it was epidemic in this section.

Our fortunate escape from typhoid, from which many of the surrounding villages and towns have suffered, is attributable to a plentiful supply of pure water. Several constant streams from springs and flowing wells run through the town. The present water supply is from shallow surface wells, dipping into the quicksand at the depth of a few feet. It is only a matter of time when these wells, less subject to infilteration of sewage than deep ones, will become contaminated. This contingency will be met by the construction of water works, now under active consideration.

An energetic and fearless sanitary inspector has contributed greatly to the good estate of the public health.

E. T. EEDE, M.D.,
Medical Health Officer.

---

MORRISBURGH.

*Chairman's Report.*

The sanitary condition of the village has been the subject of our careful consideration from time to time. Our Board met regularly and made such rules and regulations as deemed advisable to guard the health of the citizens. We have been specially favored by Providence this season in the health of our people. No epidemics of any kind or contagious diseases existed at any time, and to-day beg to report that there is not a single case requiring sanitary precautions.

THOMAS McDONALD,
Chairman.

---

MIDLAND.

*Medical Health Officer's Report.*

I have much satisfaction in stating that this year the general health of the community has been better than at any time during my term of office. With the exception of two deaths from influenza last winter, there have been reported to me no fatalities whatever from any contagious disease. Our death-rate from typhoid fever in former years had been high, this year it was nil. A state of things which speaks volumes for the improved sanitary condition of the town.

This satisfactory state of affairs, however, we can hardly hope to continue unless the Board can compel the powers that be to have the space of stagnant water between the esplanade and the town filled in as early as possible in the ensuing spring before the hot weather begins.

RICHARD RAIKES, M.D.,
Medical Health Officer.

---

MILLBROOK.

*Secretary's Report.*

I am able to state that the general health of the village has been good with the exception of several cases of la grippe. There has been no other disease worthy of notice. The health inspector did his duty to the entire satisfaction of the Board; no filth or dirt of any kind has been allowed to accumulate.

WM. TURNER,
Secretary.

---

MINDEN.

*Secretary's Report.*

I have much pleasure in being able to report the continued healthy state of the municipality during the past year.

Only one case each of diphtheria and scarlatina having been reported, both of a mild nature. The usual precautions were taken by the Board and no other cases have been reported

E. MOICE,
Secretary.

---

MILVERTON.

*Secretary's Report.*

Everything has progressed favorably with the Local Board here. Have had no cases of fever or other contagious diseases in the village during the year. There has been but two deaths in the municipality during 1890, and these were from natural causes. The municipal council pays a sanitary inspector to visit all premises in the village and to make special report of the sanitary condition of each place. They are therefore kept fairly clean and we do not hear much complaint. The Board meets from time to time to receive the report of the sanitary inspector.

W. D. WEIR,
Secretary.

MARKDALE.

*Medical Health Officer's Report.*

I am pleased to be able to report that during the year we have been exceptionally free from epidemics and contagious diseases. But, sir, I must not forget to mention "la grippe," which, about a year ago now, was making us its unwelcome visit. Few persons, indeed, were fortunate enough to be exempted from its attack. Most of the cases were of a mild character, but in not a few households a "vacant chair" stands as an unpleasant reminder of the la grippe of 1890.

Again about the middle of January last a quite severe form of measles made its appearance in our midst. I have distinctly traced the origin of this epidemic to a young lady who came up from Toronto on Christmas day. She had the measles and from this single case the disease spread over not merely this village, but over most of the surrounding townships.

I am glad to be able to report that during the year there has not been in our village a single case of diphtheria.

The health inspector made a tour of the village and found the water closets wells, etc., in very good condition, when they were otherwise he gave immediate instructions to have them remedied.

ANGUS EGO, M.B.,
Medical Health Officer.

---

MILTON.

*Secretary's Report.*

The Board held seven sittings during the year at which the various complaints made were dealt with.

As the Board has no medical health officer to report any cases of disease which may be prevalent, they have relied upon what they could gather from observation and other sources, and are pleased to report that the state of the public health of the town for the year has been comparatively good.

There have been a few cases of typho-malaria in the town, but quite a decrease from past two years.

The Board have succeeded in putting a stop to the slaughtering of animals within the corporation, this consequently does away with the keeping of a large number of hogs in the town, which were fed on the offals and refuse, and on account of which a great many complaints had previously been made to this Board.

The sanitary inspector has laid, during the year, five informations for violation of the Public Health Act, and on investigation, the parties complained against have been convicted.

M. E. MITCHELL,
Secretary.

---

NORWOOD.

*Medical Health Officer's Report.*

It affords me much pleasure to report that during the year this municipality was singularly free from contagious diseases. During the months of January and February, the epidemic of influenza that swept over nearly the whole earth,

prevailed in our midst, but though scarcely any one escaped an attack, only one case proved fatal. Two cases of scarlet fever, one of which proved fatal, and one case of typhoid fever were reported to me. At the present time there are a few cases of mild scarlet fever in the village. During the summer the sanitary inspector visited every household in the municipality, and several complaints as to nuisances have been investigated since, and the causes abated. The school buildings were examined and found in a good sanitary condition.

S. P FORD, M.D.,
Medical Health Officer.

---

NORWICH.

*Secretary's Report.*

For the year 1890, our village has a good record for healthfulness. With a population of 1,300, only fourteen deaths have been registered. We do not record mortality statistics as provided for by "The Public Health Act," so that I cannot say what amount of sickness there has actually been, only where death has resulted. Last spring scarlatina and measles prevailed for a short time, even adults in some instances being attacked by measles. Some two or three children died, the result of these diseases. During 1889, disease of a malarial character prevailed to some extent, but I have not heard of any cases during 1890. During the year the Board has given good attention to sanitary matters. Several complaints have been made of nuisances that existed, and the matters complained of received prompt attention. A low, vacant lot, within one block of the main street, has been used as a dumping ground for garbage and yard cleanings for years back, the Board stopped this, and had it cleaned up as much as possible, and a drain opened from the lot to the creek. The board had some difficulty in getting the keepers of hotel and livery stables to remove their manure heaps, these stables being mostly close to the principal streets, and complaint having been made, the board persisted, and finally succeeded. One slaughter-house about which complaint was made, the board has not succeeded in getting removed. On the whole, I think, now that the year's work of the board is done, and notwithstanding some little unpleasantness between the board and some of those with whom they have had to deal, the people generally agree that the board this year has given good satisfaction and done good work.

The sanitary condition of the village is very good, but could be improved by putting down a few sewers. The place is well situated for drainage on a scale sufficiently large to suit the needs of our population for years to come. The main portion of the village has been built upon for many years, and in many cases privy vaults are not cleaned out, but when necessary a new one is dug and the old one covered up with earth. The board this year has not allowed this to be done where they had knowledge of it. The earth in proximity to these old vaults must be in a bad state from the soakage from these vaults, and good drainage is necessary to carry this away, and I feel that time will compel this to be done if the increase of population does not. The council of 1889 proposed to put down a trunk sewer as a beginning along this line, but the scheme met with so much opposition from the ratepayers that it was abandoned. So long as our people generally are blessed with the good health they have enjoyed during the past year, it is not likely much will be done in the line of drainage.

WM. FAIRLEY,
Secretary.

NEWBURGH.

*Secretary's Report.*

I beg leave to report that the health of the people has been excellent during the year, in fact the village has been for the past three years unusually healthy.

There have been a few mild cases of scarlet fever, but in no case did the disease spread.

E. J. MADDEN,
Secretary.

NIAGARA FALLS.

*Secretary's Report.*

The report of the Medical Health Officer of the village of Niagara Falls for the current year, shows the healthy state of our village during the past year. No cases of any of the infectious diseases, with the single exception of influenza, were reported. The sanitary inspector reports a very satisfactory state of sanitation throughout the village during the year. The few exceptional cases that he met with in his tours of inspection being promptly and willingly remedied at his request.

M. B. MORRIS,
Secretary

NEWCASTLE.

*Secretary's Report.*

The municipality is set apart in three divisions, viz.: north, central and southern. Each division has been thoroughly inspected, and found to be in a very good sanitary condition, the well water very good. No contagious diseases have appeared throughout the municipality during the year.

GEORGE CURTIS,
Secretary.

OIL SPRINGS.

*Medical Health Officer's Report.*

I beg leave to report that in the earlier part of the year the village presented no infectious diseases. During the summer a sewer was put in on Main street, which will very materially improve the drainage in the business part of the town, and consequently the health of the residents.

It is to be regretted that more efficient means do not exist for compelling property holders to make connection with the sewer, and drain back lots into it. Typhoid fever made its appearance in the fall of the year, the first cases for six years.

A. R. HANKS, M.D.,
Medical Health Officer.

### Ottawa East.

*Secretary's Report.*

This municipality, a suburb of the city of Ottawa, was incorporated 1st January, 1890, shortly after which this Board was formed.

In the end of May diphtheria was found to exist in two houses within the municipality. These were at once placarded and measures for disinfection and isolation taken with the co-operation of the attending physicians, with the result that the disease was kept from spreading to other houses, though five deaths from it occurred in one of the infected houses, the patient in the other recovering.

In October two cases of scarlatina were reported from one house, which was at once placarded and the usual means of disinfection and isolation employed by the attending physician. Both recovered.

In December two cases of scarlatina were reported from different houses, one of which resulted in death. In the latter case the house was placarded; but in the former the attending physician did not consider it necessary, as the disease was of the mildest type, and the child convalescent before he was called in.

In August the slaughter-houses in the municipality, five in number, were visited, and inspected by the board. Only one of these was found in good sanitary condition, and a permit was at once granted. Of the remaining four, one was found to be too near dwellings to permit of its use as a slaughter-house, and its owner, C. M. Garrow, was notified to discontinue the work of slaughtering there. The others were notified to put their premises in proper sanitary condition, which they accordingly did, and were granted permits.

In October, C. M. Garrow, above named, having disregarded the notice of the board to discontinue slaughtering, was brought before two justices of the peace, charged with a violation of the by-law, and having pleaded guily was fined $5 and costs, which amounted to $3.80, which he paid. Since then, it is believed, he has observed the law.

The present sanitary condition of the village is believed to be good.

WM. A. D. LEES,
Secretary.

---

### Point Edward.

*Secretary's Report.*

The health of the village for the past year has been most gratifying. During the early part of last winter there were several cases of scarlatina, the usual measures were employed to prevent its spread. At the first meeting of the Board in April they ordered the usual notices to be posted up throughout the village calling attention to the cleaning of premises and the removal of all garbage or other deposits endangering the public health, and under the supervision of the Chairman of the Board was thoroughly carried out. During the summer months no case of any nature has been reported to the Board. Scarlatina the only epidemic which seriously threatened us broke out in in the beginning of October, and during that month there were eight cases reported to the Board, two of them fatal. Every precaution was taken by the Board to prevent the spreading, and am glad to state with good results. The disease has been principally in one locality or street, opposite or in front of this street there is quite a large tract of marshy land.

W. MITCHELL.
Secretary.

PORT STANLEY.

*Secretary's Report.*

I am thankful to say the services of the Local Board of Health have been very light. Only one complaint of a nuisance being made, that of the carcass of a dead horse washed ashore on the beach west of the village. Prompt measures were taken to have the nuisance abated. Early in the spring the Board caused notices to be posted up calling on the inhabitants to clean up their premises, which, I believe, was satisfactorily done. There was no medical health officer appointed, owing to the refusal of the only physician in the village to act as such officer; but for the future I do not think there will be any difficulty in securing the services of a medical practitioner for such office as there are now three physicians located in the village. I am pleased to say that the general health of the village for the present year has been first-class. With the exception of la grippe during the past winter, which, I believe, very few people escaped, there were no contagious diseases of any description whatever reported.

JAMES GOUGH.
Secretary.

---

PORT ROWAN.

*Secretary's Report.*

There were four meetings of the Board held during the year, 1890. At the meeting in May the health inspector was directed to make a thorough inspection of the village, and report at the next meeting of the Board.

In his report he complained against nine nuisances, which were afterwards removed upon a notice being served upon the parties offending by the chairman of the Board.

There were no epidemics prevalent during the year.

JAS. RYAN.
Secretary.

---

RIDGETOWN.

*Medical Health Officer's Report.*

It has been a matter for congratulation that up to the end of the year the town has been in a remarkably healthy condition, there have been no epidemics of any disease, neither has their been any cause particularly for sickness or mortality. Great improvements have been made in regard to the drainage of certain parts of the town. The dry earth system in regard to privies has been made universal, this combined with drainage and properly enforced will, I have no doubt, render our town one of the healthiest in the Province.

C. B. LAKE, M.D.,
Medical Health Officer.

SOUTHAMPTON.

*Medical Health Officer's Report.*

I am pleased to state that our village still retains its previous reputation for its freedom from disease. In the early part of the year "la grippe" visited us, but soon disappeared. During the month of October we were visited with a few cases of sporadic diphtheria of a mild type, otherwise we have enjoyed freedom from infectious diseases. Sanitary regulations are very fairly attended to by the inhabitants.

W. S. SCOTT, M.D.,
Medical Health Officer.

---

STOUFFVILLE.

*Secretary's Report.*

During the year our village has been visited by diphtheria, typhoid and scarlet fevers. In April last some twelve or thirteen cases of diphtheria occurred, five of which proved fatal; but every precaution being used finally the trouble was apparently overcome. In September a case of typhoid existed, but with much care the patient's life was saved. In October diphtheria returned and remained for four or five weeks; eight persons being affected on this occasion. However, we are thankful to say no deaths occurred. One case of scarlet fever was discovered in the month of November. With the close supervision of our sanitary officers we have been able to cope fairly well with each disease.

H. W. WOODGATE,
Secretary.

---

SPRINGFIELD.

*Secretary's Report.*

The Board of Health was regularly organized, and early in the season a thorough inspection of the municipality was made, and all places found in an unsanitary condition were as soon as possible attended to, and as a result we have enjoyed perfect freedom from diphtheria and scar atina. We have had but one case of typhoid fever so far as I have been able to learn.

J. B. LUCAS.
Secretary.

---

STIRLING.

*Medical Health Officer's Report.*

I have the honor to report that the sanitary condition of this village during the past year has been exceedingly good.

We had a visitation of "la grippe" during the winter and spring, which was quite prevalent in many families and severe upon elderly people; but no deaths occurred from said disease within the corporation. The village has been quite free from infectious diseases.

G. H. BOULTER, M.D.,
Medical Health Officer

SIDNEY.

*Medical Health Officer's Report.*

It gives me pleasure to be able to report that we have passed through a year remarkable for the absence of any epidemic disease outside of "grippe," which was the common lot of nearly all to enjoy to their weal or woe, and which rendered medical skill and scientific research equally faulty as regards its prevention and to control, and while it visited all alike, I am pleased to say that in my jurisdiction the results have been better than was expected and the death rate small.

The usual number of cases of complaint for careless exposure of offal have presented themselves, while the willingness of parties concerned to act in rectifying wrongs has rendered your humble servant and his colleague material help in the onerous discharge of other duties. And while the above has been so satisfactory I have to regret that the cheese factory nuisance is so lightly treated by factory owners, and must urge upon our Local Board the necessity of more stringency in the disinfection of the same and the proper drainage necessary to prevent any pollution of the premises or atmosphere. I would also call attention to the proper disinfection of many sink wells as well as the proper drainage and disinfection of a number of the cellars located within our township.

J. W. SIMMONS, M.D.,
Medical Health Officer.

---

STREETSVILLE.

*Secretary's Report.*

Eight meetings of the Board have been held during the year. On the whole, however, less sanitary work has been done in the municipality during 1890 than in any previous year since the passing of the Public Health Act.

The Sanitary Inspector presented a report in August stating that he had visited the different premises in the village. He complained of the damp condition of many cellars, arising from imperfect drainage, and also reported that in other premises he found nuisances in the shape of accumulations of manure or neglected closets. But it does not appear what steps have been taken to effectually remove the evils and abate the nuisances complained of. At the October meeting of the Board a resolution was passed requiring the Inspector to send in before this date his report of the work performed by him during the year.

There was an unusually large number of deaths in the village during the first six months of the year, resulting in many cases from the influenza that prevailed last winter. There were two deaths from diphtheria and one from measles. During the last three months there have been several cases of typhoid fever in the east end of the village, but no deaths therefrom.

A new public cemetery is being laid out on the east side of the River Credit in what appears to be a suitable situation. After all the steps that have been taken to do away with the slaughter-house nuisance, the slaughtering of animals in contravention of the provisions of the Public Health Act appears to be openly carried on in the centre of the municipality.

This Board is of the opinion that each physician practising in the municipality should report to the Secretary every case of infectious disease as required by the Public Health Act.

WM. J. PINNEY,
Secretary.

THEDFORD.

*Secretary's Report.*

I have the honor to report that the healthy condition of our village compares favorably with surrounding municipalities. The prompt manner in which our Medical Health Officer and Sanitary Inspector perform their duties tend to keep our village in a good sanitary condition. There have been several cases of malarial fever, and some two or three cases of typhoid resulting in two deaths. There have been several cases of diphtheria, but none fatal; also several cases of diarrhœa.

Our Sanitary Inspector reports having made one hundred and thirty-five visits during the year, and at the present time the village is in a good sanitary condition.

WM. BROOKS,
Secretary.

---

TEESWATER.

*Secretary's Report.*

I beg leave to report that the general health of the residents of the village has been good for the current year. With the exception of a few cases of la grippe, there have been no cases of infectious disease in the municipality.

The Board have had a few cases of nuisances to deal with which have been properly attended to.

At the present time there are no serious cases of sickness nor contagious diseases in the village.

JOHN FARQUHARSON,
Secretary.

---

TOTTENHAM.

*Secretary's Report.*

Tottenham, with one or two exceptions, has always been in a satisfactory condition as regards public health. It is naturally high and dry, and its Board of Health, ever since its incorporation in 1885, has been indefatigable in its duties. The dry earth system has always been insisted upon and no underground pits are permitted. The only nuisance to be complained of is a stagnant pond on the grounds of the railway and village corporation. Both corporations refused to abate it, and the village Board of Health, not wishing to undertake the task of entering suit against so formidable defendants, called upon the Provincial Board under sec. 64, cap. 63, R. S. O., 1887, to investigate the matter.

GEO. P. HUGHES,
Secretary.

THAMESVILLE.

*Secretary's Report.*

I beg leave to report that the sanitary condition of this village has been good for the past year.

A few cases of scarlet fever, measles and mumps were reported, none being fatal.

We are fortunate in having a supply of good pure spring water from a gravel bed a few feet from the surface of the ground.

J. DUNCAN,
Secretary.

---

UXBRIDGE.

*Secretary's Report.*

The Local Board of Health begs to report that it has had several meetings during the year, and that the Sanitary Inspector with some of the members of the Board have made a personal examination of nearly all the houses in the town and had them all put in good shape. The town was never in as good sanitary condition as at present. There have been a few cases of diphtheria and typhoid fever, one death in each. The houses in all cases were thoroughly renovated and disinfectants used.

A. D. WILLIAMS,
Secretary.

---

VIENNA.

*Secretary's Report.*

It affords me much pleasure to say that the sanitary condition of this village for the past year has been exceptionally good, not the least sign of disease of a contagious character having appeared. In this vicinity we are blessed with a goodly supply of excellent water, and the drainage afforded by the Otter Creek which runs through our village probably accounts for this locality being in general a very healthy one.

W. WATTS,
Secretary.

---

WARDSVILLE.

*Secretary's Report.*

Our village enjoyed almost entire immunity from all kinds of contagious diseases during 1890. A case or two of whooping cough were all that came under my notice. This may have been due to the vigilance of our Board. Nothing escaped them.

D. JOHNSON,
Secretary.

WATERDOWN.

*Medical Health Officer's Report.*

Our mortality has again been very light, only six deaths occurring during the year. Four of these were from chronic troubles and occurred among aged persons.

In the early part of the year we had a severe visitation of influenza from which few escaped. Two deaths occurred indirectly from this cause. After this epidemic passed the community enjoyed good health until the months of November and December when an epidemic of mumps visited us. It was not characterized by any exceptional severity but was somewhat remarkable for the number of adults attacked.

I believe the issuing of notices by the Board requiring all garbage to be destroyed early in the spring has had a great influence in preserving the health of this community.

J. D. COURTENAY, M.D.,
Medical Health Officer.

---

WATFORD.

*Secretary's Report.*

At a meeting of the Board it was decided to distribute circulars throughout the municipality giving a synopsis of the by-law now in force, and urging upon the inhabitants a strict compliance therewith. Also that the sanitary inspector make a general inspection of the municipality, which was done. Owing to the lateness of the season the work of inspection was in a measure thrown away, on account of the amount of grass and weeds growing everywhere which prevented a thorough sanitary inspection being made. An effort was made to have all privy vaults cleaned out and the contents removed outside the municipality, this measure was readily complied with by a number of the inhabitants, but a large majority rebelled, and even threatened the authorities if compulsion was adopted. The Board felt disposed to let them down easy. It is a difficult matter to enforce law here.

A frequent cause of complaint during the hot weather was pig-pens. We have between twenty and thirty in the village, the majority of them are kept in accordance with the regulations, but the best kept pens are more or less a nuisance. One case in particular has been the cause of almost daily complaints and not without sufficient reason. During the warm weather the inspector visited this locality thirteen times before an abatement of the nuisance was made, and that was only partial. The keeper of the pigs being a poor man, had the sympathy of the authorities to the extent that compulsory measures were not resorted to.

During the past summer a few cases of typhoid fever existed, some attribute the cause to the impurity of the water. I may state, however, that the drainage of our village is very defective. In many cases private drains empty in the street ditches, which are also defective, therefore it must be evident that with bad drainage and the removal of the contents of privy vaults in the heat of summer, sufficient unsanitary conditions exist to cause more or less typhoid.

It is to be hoped that the Board will be more successful in their efforts next year in carrying out the requirements of the health by-law, and if the suggestions made by the sanitary inspector in his report be adopted we may look for better results in future.

JOHN REID,
Secretary.

WALLACE.

*Medical Health Officer's Report.*

I would beg leave to report that the general health of the residents of the township for the current year has been exceptionally good, there being no reports of infectious diseases made during the year, with the exception of three families afflicted with diphtheria in a mild form, one death only being reported. The usual preventatives of disinfection and isolation have been practiced in all cases, and the disease kept within as narrow limits as possible.

Vaccination has not been as well attended to as it should have been, there being no general vaccination nor inspection of schools in that connection.

Cheese factories and slaughter houses have so far as reported been kept in a good condition, at least there have been no complaints from any citizens as to any offensive condition existing at such places.

J. STANDISH, M.B.,
Medical Health Officer.

---

WESTON.

*Chairman's Report.*

The Board met five times during the present year, and on each occasion received a report from the sanitary inspector as to his inspection of slaughter-houses, hotels, railway stations, private premises, etc., which were with but few exceptions found in a satisfactory condition. The Board found it advisable to order the cleasing of certain wells; but all other necessary work was done on the simple recommendation of the inspector.

Our Medical Health Officer considered it advisable to procure a lactometer for the use of the Board and certain tests of milk were made by him.

Two cases of diphtheria existed in our village last spring, but the results were not serious. No other contagious diseases whatever were brought to our notice.

JOSEPH NASON,
Chairman.

# TOWNSHIPS.

## ALDBOROUGH.

*Medical Health Officer's Report.*

With the exception of la grippe, this year has been an exceptional one in its freedom from contagious diseases. Two or three cases of diphtheria of a mild type; the same of scarlet fever. Of typhoid fever two deaths were reported to the clerk of the municipality. Two cases of this disease came under my notice, one of which was imported from Chatham. A few deaths occurred from, or from causes directly traceable to la grippe.

Malaria has been less active this year than usual, owing, I believe, to our extended drainage system.

S. M. DORLAND, M.D.,
Medical Health Officer.

## ASPHODEL.

*Medical Health Officer's Report.*

There were three cases of diphtheria reported to me this year, and immediately the infected houses were visited, the necessary orders as to disinfection given, and the schools closed in the neighborhood. Every precaution was taken and the disease shortly stamped out. There have been no other contagious diseases reported to me, nor have I had any in my practice. The cases reported to me all proved fatal.

J. McNAUGHTON, M.D.,
Medical Health Officer.

## ANCASTER.

*Secretary's Report.*

I have much pleasure in stating that from the report of the Medical Health Officer it appears that there has been little sickness this year, and none of a contagious character, except a few cases of scarlet fever, and those only of a mild form. The sanitary condition of the municipality is in a very satisfactory condition.

JOHN HESLOP,
Secretary.

### Amherst Island.

*Secretary's Report.*

I have to report this township has not been visited with any contagious diseases, save la grippe, which was so universal in this locality within the past year, and with the exception of this the township has been in a very healthy condition. Since the 16th of January there have been thirteen deaths. Of these seven have been caused principally from old age, one victim from la grippe, one victim from miscarriage, two victims from consumption, one victim from cancer of the stomach, one victim from remittent fever, so that it can be easily seen we have been free from any very serious diseases.

The reason we have no Medical Health Officer is on account of having no resident physician. In case of sickness medical aid is called in from Kingston or Bath, as the case may be, but our island has never been in a position to support a resident physician.

W. H. MOUTRAY,
Secretary.

---

### Albion.

*Secretary's Report.*

A complaint was lodged by Mr. Thomas Stinson complaining that the Church of England burying ground had been established close to his house and well, and that said burying ground was going to be the cause of destroying his well.

The Rev. Mr. Blanchard also made complaint that the Methodist burying ground was also a grievance, and that the Board of Health should take it into consideration. The members after examining said burying grounds agreed to take evidence in the complaints before them.

The Board after hearing the different evidence as to the two burying grounds at the village of Palgrave, came to the conclusion that no public nusiance existed, and that being the case the Board of Health for the township of Albion has no power or authority to interfere in the matter. The sanitary condition of the township has been good during the year.

JOHN IRWIN,
Secretary.

---

### Ameliasburg.

*Medical Health Officer's Report.*

In making a report on the sanitary condition of the Township of Ameliasburg for the present year, only three points of importance have come under my notice. First, a single case of diphtheria presented itself during the year in my practice. This was promptly reported and the requirements of the statute strictly enforced and carried out. The case recovered, and no further spread of the disease took place although there were several other small children in the same house. I should not consider this case of itself of any importance were it not for the fact that another case in a neighboring municipality was not reported, and being of a very mild case was not placed under professional treatment, nor was

any disinfection used, and the child after a week's sickness sent to school. The result was the closing of this school for five weeks, with the disease communicated to thirteen children in my practice, and I was informed to two in another physician's practice. I simply mention this fact as I think it should remind us that we cannot be too careful in carrying out the requirements of the law.

The next point to which my attention has been called, is the condition of the wells from which drinking and cooking water is obtained in this township, at least in the western portion of the township. These wells are generally shallow, going through the thin soil and a few feet into the limestone rock. This necessarily gives a large percentage of surface water at certain times of the year, which, if allowed to stand through the summer, gives rise in some cases to fearful mischief. The same may be said of some cellars. The disease known to the public in this township as gastric fever which often comes as a pestilence, is largely, if not altogether due to the water supply from those shallow wells. Without going into any of the details of this subject, I think the public should in some way be notified of the importance of thoroughly cleansing such wells after the spring freshet and before the low water of midsummer.

The third point to which I wish to call the attention of this Board is the necessity of at once taking means to prevent the placing of milk cans containing milk in wells of any kind. I say wells of any kind, for not only does the milk contaminate the well, but soon has the well in a condition to contaminate the milk, and hence this practice should be stopped altogether. Tanks into which water with ice if necessary, can be placed should be used. These tanks should be cleansed regularly.

As this last is a subject of importance and one easily regulated, I think our Board should take some steps not only with regard to stopping the practice, but also with regard to notifying the public to provide such means as may be required to take care of milk in some other way.

T. H. THORNTON, M.D.,
Medical Health Officer.

---

ARRAN.

*Sanitary Inspector's Report.*

During this year the general health of the inhabitants has been good, with the exception of the visitation of la grippe towards the close of 1889 and the former part of this year, there were very few who entirely escaped the attack; in very many cases it was extremly severe and a number succumbed to its effects, and in many cases the after effects were fatal. Otherwise there has been perfect freedom from any epidemic, and at the present time the general health is good. Greater attention and care is being given to the sanitary condition of private houses and public schools in regard to their ventilation, water drainage, etc.

A. NEELANDS,
Sanitary Inspector.

ADMASTON.

*Secretary's Report.*

I beg to state that we have no Medical Health Officer, as the council of this municipality did not think it was necessary to appoint one so long as the sanitary condition of the township remained in its present condition. We have had but one meeting of Local Board of Health during the year, no other one having been called by the chairman, owing to the municipality being almost free from contagious diseases during the year. No complaints have been made to the Board of any nuisances existing in the township.

J. CONNOLLY,
Secretary.

---

ALBEMARLE.

*Secretary's Report.*

We again have the gratification of being able to report the entire absence from our township of all infectious diseases during the past year. There have been a few more deaths than in previous years, but all from natural causes.

The death-rate of this township is very low compared with other municipalities, which fact we believe is due to our salubrious climate and the purity of the water. The services of our Medical Health Officer have not been required or called into requisition, and in consequence this Board have deemed it entirely unnecessary to request a report from said officer, thereby saving the expense of the same. We have therefore much pleasure in being able to report the very satisfactory sanitary condition of this township.

CHAS. WHICHER,
Secretary.

---

BROCK.

*Secretary's Report.*

We have received from the medical officers, Messrs. McDermot and Fierheller, and from Dr. Park, reports of several cases of scarlet fever at Saintfield. From Drs. Hart and Bingham, 2 cases of diphtheria and 1 of typhoid fever at Cannington. From Dr. Gillespie, of Cannington, 1 case of scarlet fever. I may state that all reports having been made by the Sanitary Inspector requiring immediate attention has been attended to. The people of this municipality, with a few exceptions, are beginning to realize the necessity of keeping their premises clean. During the month of November, owing to diphtheria being prevalent in the village of Sunderland, we were compelled to give instructions to the Inspector to close the public school for a fortnight. And I may say that owing to the exertions of our Medical Health Officers, Messrs. McDermot and Feirheller, the disease was completely stamped out in said period. Altogether I fully believe the township to be in a healthy condition.

THOS. H. WALSHE,
Secretary.

EARTON.

*Secretary's Report.*

In presenting our annual report, we are pleased to be able to state that during the past year there have been very few cases of contagious diseases, such as typhoid fever, scarlet fever or diphtheria. A disease called la grippe was quite prevalent during last winter and in some cases proved fatal. The Sanitary Inspector has made a large number of inspections, and reports everything satisfactory except the Rowlin nuisance, the cattle byres of Messrs. Stroud & Black, and the dumping of night soil in the township. There is very little trouble with the butchers now, although they get careless sometimes and allow their places to get filthy, but with one or two exceptions they comply at once with the notice given them.

ROBERT D. BENSLEY,
Secretary.

---

BLENHEIM.

*Secretary's Report.*

We beg to state that the work of the Board this year has not been arduous, owing partly to our system of dividing our large township into divisions, which are under the supervision of one or two members of our Board. This divides the work, and has proved very satisfactory, as one or two members are quite as competent to attend to most cases as the whole Board. The slaughter-houses which were formerly a source of much trouble have been mostly removed from the villages, and during the past year we have only been troubled by one of these buildings which emptied its washings into a spring creek. Our committee finally succeeded in getting this building removed and the nuisance abated. The amount of diphtheria and typhoid in the township has been but nominal, only two cases of diphtheria proved fatal.

The people generally are holding up our hands and uniting with us in any work for the general good.

M. F. AINSLIE,
Secretary.

---

BLANSHARD.

*Secretary's Report.*

We are pleased to state that during the past year the general health of our township has been remarkably good. Some few cases of contagious diseases have come under the notice of our Medical Health Officer, but as he is making special reference to the matter in his report we deem such will be sufficient.

The healthy condition of our township however, has not caused any relaxation of vigilance on the part of the Board. The premises of every school section, factory, slaughter-house, etc., within the boundaries of our township have been thoroughly inspected, and where sanitary improvements were found necessary we

are pleased to state that in nearly every case they were promptly and cheerfully made. In fact the people seem to have become sufficiently educated in sanitary matters as to make the enforcement of measures on the part of the Board entirely unnecessary. There has been a marked improvement in the school sections of our township since the establishment of our Local Board of Health. More attention has been paid to drainage, ventilation, water supply for drinking purposes, and especially to the cleanliness of water closets, and it is gratifying to the Board to know that the people recognize the source from which these improvements have arisen.

J. H. JAMESON,
Secretary.

---

BRUCE.

*Secretary's Report.*

I have the pleasure to report that during the past year, no case calling for action on the part of the Local Board has arisen.

Beyond the general epidemic of influenza in the early part of the year the public health has been good.

The school houses and their outbuildings received some attention from the Board, and we were glad to find that those in charge were willing to act on the suggestions made.

HUGH MURRAY.
Secretary.

---

BAYHAM.

*Medical Health Officer's Repor*

In submitting my report it gives me pleasure to say the record of our municipality in regard to health has been fairly good. The epidemic of influenza which visited us in the early part of the year was attended with few, if any, fatal results. Diphtheria also made an attack upon us, but owing to the prompt and energetic action of our Board in placing the patients under quarantine restrictions its ravages were kept in bounds and the disease confined to one household. A few cases of typhoid fever, with favourable results, scattered here and there over our township, have also been reported. Year by year important advances are made by opening up drains and thus relieving places where stagnant water or decaying vegetable matter is likely to accumulate. The sanitary condition of our municipality is rapidly approaching a commendable standing.

A. B. RIDDELL, M.D.,
Medical Health Officer.

BERTIE.

*Secretary's Report.*

I have the honor to report that the sanitary condition of the township during the year has been good. We have two sanitary inspectors, who are very zealous in their duties, and who report that the citizens cheerfully complied with any suggestions made by them. In some portions of the township a house to house inspection was made and in all cases where complaints were made to the Local Board the Sanitary Inspector visited the premises and had the cause of the trouble removed without the Board being asked to take any further action.

There were several isolated cases of contagious diseases in different parts of the township during the year, and in October and November an epidemic of diphtheria occurred in the village of Ridgeway, which became somewhat serious. We have been unable to trace its origin as the first cases were so mild as not to attract any attention. Several children attending school while suffering from what their parents supposed was only a slight cold with common sore throat but which proved to be diphtheria. When first reported to the Board it was found to have spread to some ten or twelve families. The schools were closed, isolation enforced as far as practicable, disinfectants used and its further extension soon checked, and now it is completely stamped out; but not until some seventy cases with five deaths occurred. The epidemic was peculiar, in that so large a number of cases were adults, and that paralysis of the throat occurred in so many during convalescence. The last death was from this complication a week after all other symptoms of the disease had disappeared from the locality.

J. E. MORIN,
Secretary.

---

BOSANQUET.

*Secretary's Report.*

The death rate of the township is higher than usual on account of the visitation of la grippe.

The slaughter houses and cheese factories have been inspected and found to be in a good sanitary condition. There have been no complaints laid before the Board about the condition of the slaughter houses this year.

The trustees of the public schools have disinfected and cleaned the outhouses and cleaned the wells of the public schools.

There have been a few cases of typhoid fever, but no deaths.

There are two things that, I think, the Board should keep before the people of the township—having their children vaccinated and seeing that the wells are cleaned from which they draw their drinking water. Some have their wells cleaned every three or four years and some have not been cleaned for six years.

In the month of June, on account of a complaint laid before the Board, Mr. Dugald Campbell and I visited the farm of Mr. D. Hay, on the 1st concession. The complaint stated that his cattle were dying from an infectious disease and that the dead ones were left unburied. We found that only one had died and Mr. Hay had buried it. We saw three with tumors on the jaws. The cattle affected were in a healthy condition and in very good order. The remainder of the stock were healthy.

GEO. SUTHERLAND,
Secretary.

## Brooke.

### *Medical Health Officer's Report.*

In former reports I referred with some minuteness to the typography of the township of Brooke, its drainage system and its drinking water. There is now no special reason for going over the ground again. The sanitary condition of the township is constantly improving. That section of it which but a few years ago was thought useless as farming land and unfit for habitation is fast becoming the garden of the township and is as healthful as other parts. These changes speak volumes for drainage both from agricultural and sanitary standpoints.

In its sweep around the world the great epidemic of influenza of last winter did not forget to take in Brooke. Most of the people were more or less prostrated, but on the whole, the casualties were light in comparison with many other sections of our country. With the exception of two or three very aged persons, I am not aware that any deaths occurred from the cause. A disease affecting the nervous system so profoundly could not, however, fail leaving some traces of its work observable for many months.

Typhoid fever prevailed during the fall months, but only to a limited extent. I heard of one or two fatal cases occurring in the north part of the township. I believe this was the extent of the mortality from this cause. There is something remarkable about the propagation of this disease. It is fast overspreading the surface of the globe. It is met in city, in the open country, in the valley and on the mountain top; it is met under the worst as well as the best sanitary conditions. It seems to defy detection and no one can tell where it will operate next. It is clearly both contagious and infectious, but only slightly so. This is seen in the fact that generally but one member of a family contracts the disease at the same time, occasionally and mostly where the disease is endemic whole families suffer. These facts plainly admonish us to have careful regard for all preventive as well as sanitary measures.

Scarlatina of a mild type has kept on its rounds almost the entire year. I heard of but one death and that was at Inwood. Owing to the mildness of the disease it was not thought necessary to enforce the law with as much stringency as in a more severe endemic. Difficult at all times, but still more difficult is it to exact compliance with the law where the disease happens, as in this instance, to be of a mild type. Under all circumstances isolation is most difficult of accomplishment. First, to quarantine the inmates of an infected house has been found impossible in this section Again, those relatives and friends who are protected from the particular disease by previous infection have no scruples about entering the infected houses, and persist in so doing in all the instances that came under my observation, both in town and country. The officer of the law posts a red card on an infected house and that is the end of the matter. Great is the power of the red card.

The law is also set at defiance in the matter of the burial of the dead. Persons who die of infectious diseases are buried with the same pomp and ceremonials as before. I have seen parents take their little ones to view the remains of persons who have died of infectious diseases of a malignant type. There is no question but funerals are often the means of spreading contagion and bringing death and sorrow to many a home. Perhaps this phase of the sanitary law has not been brougnt to the notice of the people so prominently as its importance deserves.

Clearly much remains to be done. If we are to limit and stamp out these diseases it will be by methods differing widely from those now practised. Our

theories are right enough but our practices are all wrong. But, after all, this is no matter for surprise. It is but a few years since the Public Health Act was passed. Sanitary reform is essentially a social reform, and we all know how slowly social reforms take place. We are on the right road and have made some progress therein. Year by year it is hoped we shall advance a step or two. Ten years hence, no doubt, will witness great changes for the better. But thousands of precious lives must be sacrificed and thousands of homes desolated and made sorrowful before the people, as a whole, can see eye to eye with the advanced sanitarian.

A. MACKINNON, M.D.,
Medical Health Officer.

---

BEVERLEY.

*Secretary's Report.*

The health of the people of the township has been good for the year. The total number of deaths registered at this date is about 42. Consumption, pneumonia and congestion of the lungs cover about one-half of that number. The township was visited with the epidemic known as la grippe in the beginning of the year, and no doubt assisted in carrying off some feeble persons who were advanced in years, and those who had other ailments, and helped to swell the numbers registered as above. I have a report of one death caused by diphtheria, no others from contagious diseases. Several members of the family in which this death from diphtheria occurred were affected by the same disease, but with proper care the disease, so far as I know, did not spread outside of this family. The Board of Health has had almost no complaints to dispose of during the year.

W. McDONALD,
Secretary.

---

BROMLY.

*Secretary's Report.*

I have much pleasure in stating that the powers of the Local Board of Health in this township have not been called into requisition during the present year. The general health of the people of the township has been good, no cases of infectious diseases having been reported.

PATRICK HART,
Secretary.

---

BENTINCK.

*Secretary's Report.*

With the exception of an outbreak of la grippe in January last, I have much pleasure in reporting a very healthy condition of this municipality for the past twelve months. No cases of an infectious or contagious character have been reported or occurred. Our schools have been kept open the full term and no

reports other than good of their sanitary condition have reached the Board. At the first meeting of the Board two members, Messrs. Bolmack and Small, were appointed specially to look after the sanitary condition of the township and I believe they have performed their duties satisfactorily.

D CAMPBELL,
Secretary.

---

BEXLEY.

*Medical Health Officer's Report.*

In bringing before you my annual report for the year 1890, I have much pleasure in drawing your attention to the good health with which we have been favored during the present year.

This favorable state of affairs is without doubt due to the active interest taken by our Board of Health in dealing with, and taking active precautions against the spread of infectious and contagious diseases as soon as their presence became known.

In the early part of the year it was reported that there were one or two cases of typhoid, one case fatal; but as they were not under the charge of a medical man I have no personal knowledge of the cases, only common report.

During the months of January, February and March we were favored with a visit from that almost universal disease, la grippe. I am pleased to state, however, that there were very few fatal cases, none directly. But although not directly fatal it had the effect of lowering the general standard of health and predisposing to other disease.

About the last of April I was called to attend a family a mile north of Corsen's siding, in which I found three cases of scarlet fever. All recovered. Precautions were taken to prevent further spread, which were successful.

In July typhoid broke out in same family, by taking active measures it was confined to one patient who recovered. The house in which these patients resided has very unhealthy surroundings.

On the 26th May I was called two miles north of Corsen's siding, where I found a patient suffering from diphtheria. I isolated the patient during illness, and thoroughly disinfected premises after the patient's recovery—no further spread. I was unable to trace out the cause of this case.

On the 6th November diphtheria appeared in two families in Coboconk. The houses were isolated. One of the cases was in a house, part of which was used as a general store and post office. The doors communicating between the store and dwelling was sealed and an outsider obtained to attend to the mails. The schools were closed and everything possible was done to prevent the spread of this frightful disease. One case made a good recovery and the other was indirectly fatal.

These two cases may be traced to Markham village. The disease broke out in a family there and a little girl who was just recovering from supposed tonsilitis, but really diphtheria, was sent to friends here to get her out of the way of the disease. She came here and unfortunately was sent to school. The result was that the disease broke out in the family she came to visit and in another, one of the little girls of which had played with her. To the mistake on the part of the authorities at Markham may be attributed all the trouble which we have had with this disease, as Coboconk is in good sanitary condition.

It would be a good deal easier for the Board of Health, far less expense to the individual families affected, and insure greater safety to the general public, if a small building could be obtained to which patients suffering from diphtheria could be taken. The patient, with the mother or nurse, could be removed to this building and be waited upon by the family physician. This would save the remainder of the family from contagion and allow them to follow their daily labors. As it is now the whole family are simply hived in, and it is considered a crime if they but appear for a breath of fresh air, while if the other plan were followed there would be less expense and infinitely more comfort and safety to the afflicted families and also the general public.

J. J. BROAD, M.D.,
Medical Health Officer.

---

CARTWRIGHT.

*Secretary's Report.*

I beg to submit the following report :—Early in the year the usual precautionary measures were taken for the cleaning of yards, cellars, outbuildings, privy vaults, etc., which were fairly complied with, under the supervision of the sanitary inspector.

In the month of October the local practising physician reported to me ten cases of scarlet fever of a mild form all of which were confined to two families, and none of which had a fatal termination.

On the whole, I am pleased to state that our township is at present in a good sanitary state and free from contagious diseases.

WM. LUCAS,
Secretary.

---

CAMBRIDGE.

*Secretary's Report.*

I am happy to state that the year has passed away without the presence in this municipality of any epidemic, such as smallpox, cholera or fevers. We have had only a few cases of whooping-cough among children, with a few deaths. On the whole, I believe this municipality to be in a very good sanitary condition, and will compare favorably with the more healthy throughout this Province.

O. LAFRANCE,
Secretary.

---

CLARKE.

*Secretary's Report.*

I am happy to state that the duties of the Board have been very light during the year, and that our township has been almost entirely free from contagious diseases.

Only three cases have been reported by physicians, one of diphtheria, and two of scarlet fever.

The precautions taken prevented the spread of the disease, and all three patients recovered.

No complaints have been received of the existence of any offensive nuisances, deleterious to the public health.

Quite a number of cases of influenza or la grippe occurred last winter and spring, but in comparison with many other places visited by the disease, very few of the cases proved fatal.

The general good health of the residents of the township, its good sanitary condition, and its almost entire freedom from contagious diseases, have rendered the services of a medical health officer unnecessary.

ROBERT KNOX,
Secretary.

---

CARRICK.

*Medical Health Officer's Report.*

During the year there occurred in this township no very serious epidemic of contagious diseases. In two families diphtheria of a malignant type occurred and two deaths followed, but the disease was confined to the houses in which it originated, Both whooping-cough and measles were prevalent here in the early part of the year, but with the exception of a few infants in whom complications supervened, there were no deaths resulting from these diseases. There were a few cases of typhoid fever, but with two or three exceptions they were of a very mild type and ended in recovery.

The two cheese factories and one creamery in the municipality were visited by the sanitary inspector who reported them to be in a satisfactory state. In conclusion, I may say, that the sanitary condition of the municipality is fair.

R. E. CLAPP, M.D.,
Medical Health Officer.

---

CARDWELL.

*Secretary's Report.*

I have to report that this municipality in common with others was visited early in the year with la grippe, from the effects of which two deaths occurred; since then the health of the township has been good, no cases of infectious diseases having been reported to the Board.

MATTHEW WILSON,
Secretary.

---

CHAFFEY.

*Medical Health Officer's Report.*

In the months of January and February, principally, la grippe, the most wide spread epidemic that ever visited humanity, was prevalent in the township. About 90 per cent. of the population was attacked by it; of those who escaped it, children were the most numerous. Much suffering resulted especially to those of

weak constitution. Few deaths followed but deterioration of health ensued in numerous instances. In the latter part of spring and early summer an outbreak of enteric fever began its ravages in the boarding house of J. Brennan & Son, lumbermen. Between twenty and thirty employés lodged in this boarding house. Twenty cases of typhoid fever, mostly of a severe type followed with a death rate of twenty per cent. of those attacked. The cause of the outbreak was the result of the grossest violation of public health laws. While the yard and outhouses were anything but clean, the condition of the well where the drinking water was obtained, was atrociously bad. The well was ten or twelve feet on declining ground from the kitchen window, through which for two or three years kitchen refuse was thrown and had accumulated to the depth of three feet immediately at the mouth of the well. It is needless to say that the water was bad and offensive to both taste and smell. The premises were ordered to be cleaned up, the house to be thoroughly disinfected, and the well to be filled up. It required several visits from the sanitary inspector, as well as a second visit from myself and members of the Board to enforce these mandates. With these exceptions, la grippe and this single outbreak of typhoid, which was so promptly subdued, the health of the residents of Chaffey throughout the year has been excellent.

F. L. HOWLAND, M.D.,
Medical Health Officer.

---

## Caledon.

### *Medical Health Officer's Report.*

After our last general meeting a special meeting was called to be held at Alton to view the wreck and River Valley in consequence of the flood there last 13th of November, and to take steps for the protection of the public health. It was decided to clear the piles of driftwood out of the river's course so as to allow the regular spring freshet to wash away the mud from the river banks and adjacent swamps I suggested in our last yearly report, that the money subscribed by parties to a relief fund should be placed in the hands of the Local Board of Health with the consent of the donors, as the amount was too small to be distributed among sufferers. The suggestion being satisfactory to all concerned it was adopted, and the amount thus obtained was spent by the Board of Health in cleaning out the bed of the river, the work being attended to by a sub-committee appointed for that purpose. The method and amount of expenditure will be found in a separate report. The dams with the exception of one having been rebuilt and the muddy bottoms covered with water as before a great source of danger was thus avoided. Although a number of cases of malarial fever occurred in the immediate neighborhood they were all mild in their nature and none of them fatal.

It would be quite unnecessary for me to give any special report of la grippe occurring last winter, the disease being so universal that very few escaped without having an attack of greater or less severity. Nor could I arrive at any idea of the mortality of the disease, it being so often confounded with bronchitis and pneumonia, but no doubt the mortality amongst elderly people was very considerable.

During the months of September and October the village of Bellefountain

suffered from a severe local epidemic of typhoid fever. On making enquiry into the matter, I found that with the exception of three wells, the whole village is supplied by drinking water from a stream which rises from a large spring about half a mile to the west and running down through the village empties into one of the branches of the Credit River. During its course through the village several small ponds have been built on the private properties through which the stream runs and from these dams the drinking water is taken. The stream crosses three different streets, passes through several gardens, runs within five feet of a barn yard full of manure, passes an occasional privy, runs through beneath the floor of a general blacksmith shop, and finally before discharging into the Credit it fills a tank at the lower end of the village, and from this tank several families are supplied by underground pipes. Two complaints were sent to me averring that the water was polluted by a pond on the farm where the stream arises by geese having free access to it. On visiting the spot complained of I found no special signs of pollution, although the occupant of the property admitted that his geese had been previously allowed free access to the stream. This in itself would have been bad enough, but compared with other matters connected with the stream it turned out to be of small importance. At the first street crossing I saw two pigs wallowing in the stream, and the roadway is so built that the ditch at the roadside drained into the stream. At the second street crossing I saw a cow standing in the stream and drinking from it. Just below this was a well manured potatoe patch from which the stream received not only the manure soakage, but an occasional spicing with Paris green. But the worst feature of the stream was the barnyard above referred to, containing at least a dozen waggon loads of manure, soaking and oozing into it especially after rainy weather.

Three samples of water were taken in order to make a rough analysis. The first sample taken from near the head of the stream we found to be fairly good and might be pronounced safe drinking water. The second sample taken from below the first street crossing was bad and contained a large amount of organic matter and salines. The third sample taken below the manure heap and blacksmith shop from the tank at the lower end of the village was simply poisonous, being loaded with organic matter and salines, in fact this sample was so bad that although taken in a perfectly clean bottle and corked, it had an offensive smell in less than twenty-four hours. I made out a full report of the enquiry and placed it in the post office at Bellefountain to be seen there by the villagers. After thorough isolation and disinfection the trouble soon subsided, and although some of the cases were severe and of long duration none were fatal. Another instance of the effects of bad water occurred at Inglewood, where there were seven cases of diphtheria, two fatal; and five of typhoid fever, one fatal. I have repeatedly urged on these people the necessity of having a pure supply of drinking water, and of the danger of spring water to which surface water has free access, and that wells are only kept pure by repeated cleaning them out. I was asked by several at Bellefountain if parties could be prosecuted for polluting the stream there, but on this point declined to give any opinion, advising in my report to dig wells and keep them clean or to get the water from the head of the stream by sinking pipes at that point.

JAS. ALGIE, M.B.,
Medical Health Officer.

CAISTOR.

*Secretary's Report.*

I have much pleasure in reporting the healthy condition of this municipality at the present time. There has been no great reason for complaint during the year, excepting the epidemic of influenza or la grippe which was the cause of a few deaths at the time and one or two lingering cases died since, no doubt from the effect of the disease. There was a case that came under the notice of the Board of Health, that of an old man living alone in a very filthy condition who became sick. The members of the Board visited the place and put things in a sanitary condition.

Our sanitary inspector has been on the alert, and everything has been carefully looked after and no dead carcases have been allowed to remain unburied and every nuisance complained of has been properly removed.

H. J. SHARP,
Secretary.

---

CROWLAND.

*Secretary's Report.*

In presenting our annual report I am pleased to say, that this township during the year has been remarkably healthy, there has been no outbreak of disease, save one case of scarlet fever; the child recovered. The house was placarded and isolated.

No complaints were lodged with the Board regarding the existence of any nuisances. The township is in a good sanitary condition.

ALEXANDER REID,
Secretary.

---

DEREHAM.

*Medical Health Officer's Report.*

I have to report that during the first three or four months of the year, in consequence of a wholesale invasion of a severe type of influenza, an immense amount of sickness prevailed; nearly every person, both old and young, suffered from its ravages, and many of the aged and delicate feel its effects to the present time. The winter being mild and the weather very changeable, it brought with it the usual attacks of pneumonia. Many of the cases were very severe, especially those which were influenced by la grippe. During the remainder of the year the general health has been as good or perhaps better than usual; especially was this noticeable during the summer months, as diarrhœa did not prevail to anything like the extent it did in former years.

Diphtheria occurred to a limited extent, but no extensive epidemic prevailed and prompt measures were adopted to suppress it and prevent its spread. The eruptive diseases, such as scarlatina, measles, etc., gave no cause for alarm; in fact, I have neither seen nor heard of any cases in this municipality during the year.

Typhoid and malarial fevers have prevailed to some extent, but no more than usual; I think considerably less prevalent than last year.

H. MINSHALL, M.D.,
Medical Health Officer.

---

DOWNIE.

*Secretary's Report.*

It affords us great pleasure to state that the health of the inhabitants of this municipality has been free from infectious diseases of any description, with the exception of two cases of diphtheria in one family, but no deaths. Also *two cases of typhoid fever* in another family, caused by the impurity of the well water. One of the cases resulted fatally. Physicians (with one exception) made no report of contagious diseases attended by them, so that if there were more cases than the above named, the Board was not aware of them. We would suggest that the practice which prevails of converting our rivers and streams generally into common sewers by our cities and towns, and also the erection of cheese factories along their banks, and using the same as depositories for whey and other offensive matter should be prevented by an Act of the Legislature.

PETER SMITH,
Secretary.

---

DUMFRIES NORTH.

*Medical Health Officer's Report.*

I am pleased to report that the duties of the Board of Health have been very light during the past year. There has been very little general sickness and very low death rate. A few cases of scarlet fever and measles of mild character have occurred but no deaths are reported from these causes.

The sanitary inspectors reported at the last meeting of the Board that they had inspected the slaughter houses, cheese factories, and the premises of those supplying milk for the towns and villages and were well pleased with the way in which these premises were kept. I have visited only one school, No. 25, which I found satisfactory. The Board has, at different times during the year, called the attention of the trustees to the requirements of the law relative to the disposal of all kinds of refuse, and to the necessity of keeping the schools, yards, and outhouses clean. They have also been advised to pay particular attention to water supply for drinking purposes, and advised to pump the wells nearly dry, if possible, at least twice a year, after spring rains and before the beginning of the fall term.

The Board has instructed the trustees and teachers to report any unsanitary conditions or nuisance to the sanitary inspectors immediately. In this way frequent inspection has been rendered unnecessary.

The Board desires to call the attention of the trustees of the schools to the advantages of furnaces for heating purposes. 1st. The system insures an abundant supply of pure air which is warmed before it is disseminated through the

room. 2nd. The temperature of the room is uniform throughout. 3rd. The cost of fuel is found to be less.

The Board has been greatly pleased to notice the active interest of the trustees and the ratepayers in the sanitary condition of the municipality.

ADAM THOMSON, M.D.,
Medical Health Officer.

---

DYSART.

*Secretary's Report.*

During the past year the public health in the district within the jurisdiction of this Board, has been excellent.

In the early portion of the year, whilst the grippe epidemic was elsewhere at its height, the public health in this district was but little affected, and only a few isolated cases of the epidemic made their appearance. These cases were very light, and in no instance, coming under the knowledge of this Board, was there any second attack of the complaint. So few were the cases, that had it not been for the reports published in the newspapers elsewhere, the epidemic would have passed unnoticed, and the few cases would have been regarded merely as slight attacks of influenza.

The freedom from disease and epidemics in this district is well worthy of special notice. No case of ague or malarial fever has ever occured in this district during a period of many years. It may be safely asserted that the population of this district are totally exempt from ague, malarial fever and hay fever. Epidemics, of any kind, are almost unknown, and the ordinary diseases of humanity assume in every case a mild form.

The foregoing facts are beyond dispute, but the causes of this immunity from disease would require more space than is available in a brief annual report.

During the past year there have been no cases of typhoid, scarlet fever or diphtheria.

The inspector reports all closets in a state of cleanliness.

The water in the village wells is reported by the inspector to be free from any contamination, and the water in the creek is supplied by springs within so short a distance that it may fairly be assumed to be as pure as ordinary spring water.

It is worthy of notice that in some instances the water in a few wells in the district, at irregular intervals, acquire a bad smell. The cause of this is the presence of sulphuretted hydrogen, arising from iron pyrites.

The inspector reports that beyond seeing to the interment of some dead animals, and ordering the cleaning out of certain cess-pools, there have been no nuisances calling for his intervention.

W. PRUST,
Secretary.

---

DUNGANNON AND FARADAY.

*Secretary's Report.*

I have to report that an outbreak of measles during the summer took place in Mounteagle, the adjoining township to Dungannon. The outbreak was of a severe character and it is reported that several deaths took place.

The disease crossed the line and spread over the north end of the Township of Dungannon, and the result was that one child died. The epidemic however died away and there is not a case of it here at the present time, and the general health of the rest of the municipality is, and has been, remarkably good.

A. C. BARKER,
Secretary.

---

DUMFRIES SOUTH.

*Medical Health Officer's Report.*

The township has been very free from epidemics during the past year (of course saying nothing of la grippe). We have had four or five cases of typhoid fever reported, one of which proved fatal, and one was imported from Brantford. In most of the cases the cause could be traced directly to the drinking water. I might say that they were all isolated, that is to say no two patients in one family. Strict sanitary measures were carried out in each case. A number of wells have been examined and the water tested, and there was only one found good. Sanitary measures were employed to rectify the evil.

E. C. KITCHEN, M.D.,
Medical Health Officer.

---

DARLINGTON.

*Medical Health Officer's Report.*

The first three months of this year are memorable for the epidemic of influenza, from which this township, in common with the rest of the world, suffered severely. The greater number of nearly every family were attacked. Very few fatal cases reported, and these either aged people or those suffering from a relapse and complication of diseases. One peculiarity noticed here was that old and delicate people, as a rule, had the disease in a very mild form. A number of cases of incipient phthisis were hastened on their way; and others always healthy before, but of a tubercular tendency, at once showed symptoms demanding the immediate trial of Koch's remedy had we had it at our command.

A good many cases of affection of kidneys and bladder, catarrhal and nervous diseases have followed as a sequel to la grippe.

During the summer months the health of the township was very good, with less dysentery, diarrhœa and kindred troubles than has ever been known here for many years.

An epidemic of scarlet fever of mild type prevailed pretty generally during the later summer and fall months. Only one or two fatal cases reported.

J. C. MITCHELL, M.D.
Medical Health Officer.

DALHOUSIE AND NORTH SHERBROOKE.

*Secretary's Report.*

So far as any of the members of the Local Board of Health know, or can ascertain, the sanitary condition of the united townships during the present year, has been, and is, very good. There have been no epidemics of any kind. The respective members of the Local Board of Health have been on the alert to ascertain whether any nuisances endangering the public health existed in the localities in which they lived, causing the immediate removal of any nuisance, if such existed.

GEO. CAMPBELL,
Secretary.

---

ELDERSLIE.

*Secretary's Report.*

The Board was duly organized and always ready to take active measures to carry out the provisions of the Public Health Acts. During 1890, fortunately, our duties have been very light. The members of the Board acted as inspectors and inspected the school grounds, cheese factories and creameries situate within the township, and pronounced everything in good order. The Board received no notice from medical men of any contagious diseases prevailing during the year.

C. D. McKECHNIE,
Secretary.

---

ELMA.

*Medical Health Officer's Report.*

The township of Elma has been remarkably free from epidemic diseases during the year, more so, I believe, than it has ever been, due as I think to the excellent system of drainage adopted by the laws of the Province. The great benefits derived from this drainage law is to me quite manifest in this flat loamy township, as in former years we had very many deaths from diphtheria alone, and I find that this disease is growing less every year as the country becomes drained. In a former report I referred to the prevalence of an existing nuisance in many of the cheese factories of this township, viz., the feeding of a large number of hogs on the premises. Wherever this is practiced the results must be not only bad for the citizens who have to live in close proximity, or who have to continually pass such factories, but also in my mind deleterious to the cheese manufactured on such premises. This is a state of affairs that will not be easily remedied, inasmuch as nearly all cheese factories are the property of a given number of patrons, who save a great deal of time and expense by having the hogs fed on the premises of the factory, instead of taking the refuse home and feeding their hogs there, and allow the hog to roam at large in the summer months, as all laws of sanitation demand that he should. Therefore this question is one that any council elected by the people, many of whom are patrons, is not likely to grapple with, as their tenure of office would be cut short. Therefore the duty is one that I think should be relegated to the Government, and when made law, rigidly enforced by the

Government Inspector and no option allowed, and I am sure the present suffering makers of cheese, who have to submit to their employers, will consider the removal of this nuisance a boon of no trivial nature. Then as a people we can export a very important article of Canadian industry with a conscience that we have done nothing to injure the quality of it by any carelessness on our part.

With regard to infectious diseases, we have only had one case of typhoid fever in the Township of Elma during the year, and this one in a very large family. I saw several cases of measles, and we had one or two deaths from the sequelae of measles during the months of February and March, pneumonia being the cause of death. We had a few cases of scarlet fever, but no fatal results reported to me by any one. With reference to diphtheria, about which I have already spoken, I am happy to say that the very efficient drainage has proved a very great benefit in the way of helping to stamp out a disease that was once very prevalent here. I don't think we have one case for every ten of former years, which goes to show that the moist soil and atmosphere were favorable to the spread of the diphtheritic microbe.

The amendments to the Ontario Health Act requiring the co-operation of school teachers is a good one, and might well go farther and make it compulsory for all children to study something of sanitary science, which might well replace one of the multitudinous branches now imposed on the suffering children of this generation.

In conclusion I have to reiterate all I said in previous reports in reference to that clause in the Act allowing township councils to appoint their own members a board of health, as is nearly always done. No man seeking the popular suffrage should be deputed to enforce so important a law. I hope that the Government will give the matter their wise consideration. To my mind the necessity for such a change is obvious.

J. R. HAMILTON, M.D.,
Medical Health Officer.

---

EAST ZORRA.

*Secretary's Report.*

I would state that there has been nothing before the Board of Health this year. The hog-pen nuisance upon which my brother, Dr. H. M. McKay, reported, was put in a proper shape, Mr. King fulfilling his agreement early in the spring. There have been no complaints of any kind, so we have no report to make. The people of the township have fully complied with the terms of the township by-law, which was well distributed.

D. W. McKAY,
Secretary.

---

ERNESTTOWN.

*Medical Health Officer's Report.*

During the past year we have had two slight epidemics in this township. One in April and May, of scarlatina, and although there were a number of cases, still they were all of a mild form and speedily recovered. Through the fall malarial and typhoid fevers have been prevalent. They were no doubt caused by

the low water in the wells and by the low level of water in "Mud Creek," which runs through this township. All resident physicians have been supplied with blanks for reporting contagious diseases during the past year. The sanitary condition of the municipality at present is good.

J. E. MABEE, M.D.,
Medical Health Officer.

---

ESSA.

*Secretary's Report.*

I beg to report that the general health of the people during the year has been remarkably good. A few cases of typhoid fever have been reported, but in every instance the patients had contracted the fever in Toronto or other places. Very few cases of diphtheria were known in the township this year, and these of a mild type. We have an excellent Board of Health that has been active in looking after the sanitary condition of the township.

A. T. BANTING,
Secretary.

---

ESQUESING.

*Secretary's Report.*

The principal sanitary work of the Board during the year was to cause the removal of the slaughter house on lot 16, concession 9, out of the municipality.

The Sanitary Inspector made his usual visits to the several villages, and reports them in a fair sanitary condition.

Mr. Beaumont, a member of the Board, also reports that no contagious diseases exist in the village of Glen Williams, but he is of the opinion that the sanitary condition of the village as a whole is not as good as it should be. There is no Medical Health Officer.

There have been cases of diphtheria and of typhoid fever in the municipality of which there is no official report. The Sanitary Inspector has no report on the subject, nor has he made any inquiries relative to such cases, owing perhaps to the fact that no official notice has been given him in relation to such cases.

There seems to be a good deal of indifference in all quarters as to the necessity that exists for more active efforts to enforce or give effect to the provisions of the Public Health Act.

The law is good and in the interests of the public, but very indifferently administered.

J. MURRAY,
Secretary.

---

ERIN.

*Secretary's Report.*

The health of the township has been good. No cases of infectious diseases have been reported to the Board.

The attention of the Board was called to the state of a dwelling on the 8th line, in the upper part of the township, occupied by an aged couple named McLellan. The Medical Health Officer was requested to inspect the premises, and having done so, reported that the house was altogether unfit to live in on account of its dilapidated condition, apart from the unsanitary state in which he found it. As the aged couple were in very destitute circumstances, and had for a number of years been in a great measure dependent on their neighbors for a livelihood, and on account of old age and infirmity unable to take care of themselves, the Board recommended that they be removed to the house of industry, which was done.

THOMAS YOUNG,
Secretary.

---

## Euphrasia.

*Medical Health Officer's Report.*

I beg to submit the following report on the state of health throughout the township during the year 1890. At the outset I am glad to be able to say that this year has been unusually free from severe epidemics of infectious or contagious diseases. I must not, however, forget to mention la grippe, which did not exempt Euphrasia in its rapid sweep over the American continent. It reached these parts about the first of the year, and for a month or six weeks it was the all absorbing topic and everything else in the shape of disease seemed to be secondary to it. No household did it go by, and not a few will mournfully remember its visit by a vacant chair. On the aged it was particularly severe and in many cases fatal. Many complain that they have not yet recovered from its effects, and this is not to be wondered at when we know that it is a blood disease, its poison reaching every organ and tissue of the system.

About the time la grippe was dying out a rather severe type of measles set in in the south-west corner of our township. They were especially severe on the 11th line, where they first appeared, and whence they spread to other parts of the township. The origin of these measles I was able to trace distinctly. They were brought in by a lady who came from Toronto on Christmas day. She was ill at the time, but not knowing what was wrong with her, she called in a physician, who pronounced it measles. It rapidly radiated in all directions until they became prevalent in many townships, viz., Euphrasia, Glenelg, Artemesia, etc. With respect to these diseases your Board took no action. The spread of the former was so rapid as to baffle all boards of health to stay its progress, while the latter, measles, is so mild in childhood compared with what it is in adult life that a good many mothers do not object very seriously to the little folk catching the disease.

We now come to speak of a disease where we can justly claim that boards of health do an immense amount of good and save many lives—diphtheria. On 25th of February my partner, Dr. Ego, was called to see a boy suffering from, as they thought, "la grippe." He found a well marked case of diphtheria. This was in the south-west part of the township. He reported it. The house was placarded and other means taken to prevent its spread. There were two cases in this house, both of which recovered. On making enquiries it was found that one member of the household who had just come home had had a very severe sore throat in Toronto, though a physician there had told him it was not diphtheria. I have no doubt in my own mind that this was the source of the outbreak. After

these two cases it seemed to smoulder for about a month, when it reappeared in the family of the next neighbor. There were three or four cases in this house, one proving fatal. The fatal case seemed to add great emphasis to the instructions of the Medical Health Officer, and hence I think the precautions in shape of isolation and disinfection were much more carefully carried out in second outbreak than in the first one, with the happy result that there have been no cases in these quarters since.

There has been an occasional case of bilious remittent fever, but they have not been numerous enough to merit the term epidemic. The general health has I think been good.

T. S. SPROULE, M.D.,
Medical Health Officer.

---

FLAMBORO' WEST.

*Secretary's Report.*

Without entering into details I may state that at our first meeting, held on February 3rd, the Sanitary Inspector was instructed to make a careful inspection of all school premises, manufacturing establishments, butcher's premises and slaughter houses, dairies and milkmen's premises, hotels and private houses in the villages. The Inspector has visited and granted permits to owners of 12 slaughter-houses, having found them all in a fairly clean condition. He also granted permits to 23 milkmen, their premises, with two or three exceptions, being in a good state of cleanliness. The two or three were ordered to clean up their premises, which order was promptly complied with. The cows in the dairies, aggregating 324, were found healthy and in good condition. He also visited all the stores, hotels, factories, school-houses and premises, and about one hundred private houses in the villages, and found all in a very satisfactory sanitary condition. During the summer he has been called on several occasions to visit houses and order improvements, which orders have at once been complied with. The Medical Health Officer reports that there have been no cases of an infectious nature reported to him by other physicians, nor have any come under his own notice since his appointment.

IRA N. BINKLEY,
Secretary.

---

FLAMBORO' EAST.

*Medical Health Officer's Report.*

A few cases of measles, scarlet fever and diphtheria came under my notice, all of which were sporadic and none of them proved fatal.

There has been quite an epidemic of parotiditis during the last two months, but with no fatal results.

There have been only two cases of typhoid fever reported to me from our municipality during the year, one being very mild, the other malignant, both however recovered. The cause of the last mentioned disease is very often traced to improperly constructed privy vaults. If the inhabitants of East Flamboro' could only be induced to use the dry earth closets, instead of pits, it would very materially reduce the amount of sickness in this municipality. The sanitary inspector should be authorized to notify boards of school trustees to have this done, or at least have the privy vaults disinfected weekly.

There have been no complaints of nuisances during the past year, which I think speaks well for the health of the municipality.

If the inhabitants of this and surrounding municipalities, assisted by their various councils, would go ahead with the draining of the land and swamps, the day is not very far distant when we shall see water running down our ravines in the spring of the year only, and by so doing we may improve the public health and bid good-bye to malaria.

J. A. McGREGOR, M.D.,
Medical Health Officer.

---

GLANFORD.

*Secretary's Report.*

In conversation with the Medical Health Officer, early in the month of December, I drew his attention to the subject of a report from him. In reply he stated verbally that he had nothing to report, except that he never before knew a season in which there was so little sickness. That with the exception of the disease known as "la grippe," which was very general during the early part of the year, no epidemic and no other infectious disease had come under his notice. I have also learned from our Sanitary Inspector that he has not been called upon to interfere in a single case of nuisance of any kind either real or alleged during the year just closed. In view of these facts, which require no comment from me, I have only to report that no sanitary work has been done by the officers of the Board during the year, because none was required at their hands; and I have to congratulate our Board on the existence of circumstances so exceptionally favorable.

W. M. CALDER,
Secretary.

---

GARAFRAXA WEST.

*Medical Health Officer's Report.*

It gives me pleasure to report that during the past year the municipality has been exempt from any widespread outbreaks of disease of an epidemic nature.

There were, I believe some cases of diphtheria in the west side of the township, but as I received no official notice from those whose duty it was to have reported the cases, I cannot speak with authority as to the number, severity or cause.

We have been remarkably free from the prevalent disease which of late years has made ravages in our midst, namely, typhoid fever.

I would recommend, as a preventative to the spread of contagious diseases, that it be made compulsory to have all privies, public and private, thoroughly cleaned at least twice a year, and all public outhouses disinfected once a month.

Further, that the matter of reporting cases of infectious diseases be more promptly attended to by attending physicians.

A. H. HALLIDAY, M.D.,
Medical Health Officer.

GRIMSBY SOUTH.

*Secretary's Report.*

I have much pleasure in reporting to you that the health of the residents of this municipality has been, on the whole, good during the year. Not a single case of contagious disease has been reported to me.

The sanitary inspector was instructed at our first meeting to inspect all yards and premises in the village of Smithville before the 15th day of May, and require all householders to clean their premises, which in every instance was done.

There were a few cases of measles and scarlatina of a very mild type in the township.

EDWARD IRVINE,
Secretary.

---

GAINSBORO'.

*Secretary's Report.*

It gives me great pleasure to report that the sanitary condition of this township has been very good during the year. Ten cases of scarlatina are all the infectious diseases that have been reported to the officers of the Board; of these all recovered in due time.

Only two cases of nuisances were reported to the sanitary inspectors, and these were attended to in a satisfactory way.

There has been no diphtheria in the township during the year.

There is a cheese factory at Bismarck which has been kept very clean and neat, and as a sequence the product of the factory has been first-class.

Dr. Colliver, our medical health officer, reports that the general health of the township is excellent.

S. KENNEDY,
Secretary.

---

GARDEN ISLAND.

*Secretary's Report.*

I have the honour to report that the health of the residents of this municipality for the past year has been very good. With the exception of two cases of diphtheria which were promptly moved to the Kingston General Hospital, where they speedily recovered, we have had no infectious diseases, and I may state that the sanitary condition of this municipality is on the whole very good.

R. RAYMOND,
Secretary.

GWILLIMBURY EAST.

*Secretary's Report.*

Sub-committees were appointed, consisting of the members of the Board, as well as inspectors, in order that there might be an efficient supervision of the various parts of the township. Owing to a fortunate absence of any serious epidemic the Board has not required to hold any general meeting until the close of the year. Any cases of nuisance that have occurred during the year have been duly attended to by the sub-committees of the Board. The general health of the community at the present time appears to be in a very satisfactory condition. The following is a detailed statement of the cases of infectious diseases as treated and reported by the various medical doctors practising in the municipality :—

| —— | No. of cases. | Recovery. | Deaths. |
|---|---|---|---|
| Measles | 4 | 4 | ..... |
| Scarlatina | 2 | 2 | ..... |
| Typhoid | 5 | 2 | 3 |
| Diphtheria | 10 | 10 | ..... |

A. J. HUGHES,
Secretary.

GODERICH.

*Medical Health Officer's Report.*

I find that in comparison with many municipalities we have enjoyed remarkable immunity from epidemics of infectious diseases, and although reports from some parts of the township indicate that there is yet work to be done by our Board. Nevertheless the hygiene of the municipality as a whole is a very satisfactory condition. A few cases of a sporadic nature have arisen in some localities, but have been prevented from spreading or developing into any serious epidemic.

I have been called to attend only two cases of diphtheria during the year, one of which proved fatal as a result of blood poisoning, but by isolation, disinfection and strict attention to all sanitary arrangements the spread of this much dreaded disease was prevented.

J. B. WHITELY, M.D.,
Medical Health Officer.

GLOUCESTER.

*Secretary's Report.*

The sanitary condition of this township during the last year (except as hereinafter mentioned) has been, I may say, of an average character with other rural parts of the province. The exception above alluded to consists in an outbreak of diphtheria at a place called Rockvillage, chiefly inhabited by French, and all the efforts brought to bear in reducing it seemed for a while to be of no avail, nearly every family in the village (about 20) were more or less affected by it, and about half a dozen deaths (infants) occurred. Our Board of Health closed the public school about four months ago and though the epidemic has now for the most part ceased, we have not thought it prudent to re-open the school. A few cases of typhoid fever have also occurred, and a few cases of diphtheria have existed in remote places. Wishing to get at the root of the above epidemic, I requested the Medical Health Officer of the city of Ottawa, Dr. Robillard, and our own Medical Health Officer respectively to give their opinions with regard to the origin of the disease at Rockvillage—Dr. Robillard replied as follows:

OTTAWA, Nov. 5th, 1890.

DEAR SIR,—In answer to your note of this morning as to causes of an unusual amount of sickness at Rockvillage, I beg to offer the following remarks. About two months ago or more I was called to see a boy of about 15 years at Mrs. Coté, living right in front of the school house, he was suffering from diphtheritic croup at the time of my visit. Knowing with whom I had to deal and fearful of the consequences of allowing this boy to remain where he was, I pleaded hard to have him removed to an hospital in the city. I did obtain the consent of Mrs. Coté and made all necessary arrangements to have him transferred, but at the last moment Mrs. Coté refused to let the boy go and there he remained. From this case I think originated all the others that developed in the surrounding country. There is no doubt, however, that pools of diluted sewage such as there are in the immediate neighborhood of the school in that village, will vitiate the air within a certain radius during the hot season especially, and thereby become a remote cause of disease. Another condition prevailing in many instances which would also predispose to disease is the carelessness of these people as regards the surroundings of their dwellings, and the abominable filthy condition of privies generally. But the most fruitful cause of a disease which has been more prevalent than usual this fall in that locality (I refer to typhoid fever) is in my opinion the use for household purposes of contaminated well water. I have little doubt but that the wells there are all more or less contaminated with sewage filtering from privies, stables and piggeries through the crevices of the rocks.

Respectfully yours,
A. ROBILLARD, M.D.,

Dr. Kennedy, our own Medical Health Officer, replied as follows:—

OTTAWA, Nov. 7th, 1890.

DEAR SIR,—I received your card, and deemed it advisable to investigate the condition of the village personally before attempting to form a correct idea of the cause of the epidemic in Rockvillage. I did not find any waterclosets so close to wells to cause me to think that leakages from closets to wells would pollute the water to any dangerous extent. I found the water in Mr. Richard's well in a

very impure condition. I am led to believe this water is not used as a rule for drinking purposes, but for washing, etc.; if used for drinking purposes as I am informed it is sometimes it might be a factor in the cause of diphtheria. This well is about fifty yards back of the house where the first case of diphtheria originated. The principal water supply for the village is taken from the wells of Mr. Stephenson and Mr. Williams, both at some distance from the village. Mr. Henry Robillard has filled up a well immediately in front of his row of houses known as "Robillard's row," the water in this well must have been in a dangerous state of pollution and no doubt was a factor in the cause of the outbreak of disease, especially of typhoid fever, of which no less than four cases existed in its immediate vicinity. I might state the poisons emanating from cesspools (the quarry hole in Miss Evan's yard is a fair example) or contaminated water may give rise to diphtheria in one family and typhoid fever in another. Mr. Laporte's son at 19 years contracted typhoid fever about five weeks ago, three weeks after the attack he showed symptoms of diphtheria. Mr. Laporte's house is about 100 yards from the filled up well in front of "Robillard's block." The cesspool or quarry hole in Miss Evan's yard is within a few feet of the house, one wall of her stable is contiguous to one end of the quarry hole. I do not see how a deep hole like this one can be so close to a stable and house without being polluted from both; there is no outlet for the water in this hole. I think it would be advisable to clean it thoroughly and keep it clean or fill it up completely. Every member in Miss Evan's house including Mrs. Cole and her two children suffered from diphtheria. I do not consider Mrs. Condell's quarry (formerly Young's) as dangerous to the health of the community as that of Miss Evans. Still the draining of this quarry hole is a subject for consideration by the Board of Health. The quarry excavations of A. & H. Robillard are in a very commendable condition.

In my opinion diphtheria originated from polluted water in the vicinity of Mrs. Coles house. Miss Evans' quarry hole and Mr. Richard's well are both about seventy-five yards from said house.

Sincerly yours,

Dr. Kennedy.

The Gloucester council have, at the suggestion of our Board of Health, ordered Miss Evans to fill up the quarry hole belonging to her, which as yet has not been accomplished. Our Board and township council are prepared to carry out any measure which may be dictated by medical men, assuming that they know more with regard to such things than we (unprofessional men) do. At the same time there seems to be a sort of uncertainty as to the primary cause of this epidemic in the minds of the above gentleman. The above quarry holes have existed there for a great many years; the boy Coté had probably lived all his lifetime by the side of these holes. A few isolated cases of diphtheria existed at the same time that Coté had it, at least seven miles from where he lived. In my opinion none of them know the real cause of it. One case of diphtheria occurred lately in the vicinity of Billing's bridge, with a child about four years old. On investigating the case we found that the mother of the child had been on a visit to her sister in the city of Ottawa where diphtheria existed and where a child had died. In this way I believe diphtheria and smallpox are perpetuated among the French families more than among any other class of people. We are under the impression, however, that now we have got the disease under control.

C. BILLINGS,
Secretary.

GOSFIELD NORTH.

*Secretary's Report.*

I beg to report that this township has been for the past year particularly free from contagious diseases. The sanitary condition has also been good. Cases of typho-malarial fever being very few and of a mild type, the worst case having come from the State of Michigan. The death-rate has also been below the average.

ISAAC JACKSON,
Secretary.

---

GEORGINA.

*Secretary's Report.*

The Board received a communication from the Rev. J. Fraser, stating that a case of diphtheria existed at the house of J. Lodwick, lot 23, in the sixth concession of Georgina. The Board gave instructions to the Secretary to immediately placard the premises and see that proper disinfectants were used. In making such visit I found that Dr. Grant of Beaverton was the attending physician, and that he had given instructions for the proper disinfection of the premises. The patient recovered and no further cases appeared in the family or neighborhood.

Dr. Bentley, Medical Health Officer for this township, reported that several cases of measles had made their appearance in the Walsh and Godfrey families, near the village of Pefferlaw, also that la grippe was epidemic throughout the township.

With the exception of the foregoing this municipality has enjoyed perfect immunity from any form of epidemic or contagious disease during the year that is now drawing to a close.

The sanitary condition of this municipality has been fairly good. The slaughtering of animals within the village of Sutton has not been attempted during the summer months, and all privies, wells and cellars are in reasonably good order so far as is known to the Board of Health.

ANGUS EGO,
Secretary.

---

HULLETT.

*Medical Health Officer's Report.*

There has not been one death reported during the year from contagious diseases. Only two mild cases of typhoid fever were reported and those were in two houses, no others of the family were effected. At present the township is free from all infectious diseases and tolerably free from all nuisances.

O. YOUNG, M.B.,
Medical Health Officer.

HOPE.

*Secretary's Report.*

We have had no contagious diseases within the municipality during the current year.

Slaughter houses and cheese factories are visited by the Sanitary Inspector, and if found offensive ordered to be cleaned up and disinfected.

The general health of this municipality is good.

E. E. DODDS,
Secretary.

---

HAWKESBURY EAST.

*Secretary's Report.*

The sanitary condition of the township for the present year has been such that this Board has had no cause for active interference.

There have been two cases of typhoid fever neither of which resulted fatally.

One case of diphtheria and one case of measles were reported.

At the present time the general health of the township is very good.

There are a number of cheese factories in the municipality, and before the owners or managers commenced operating these factories in the spring they were notified by the secretary of our Local Board that the factories and surroundings must be kept clean and in a good state, as the law directs.

S. LE BROSSE,
Secretary.

---

HUMBERSTONE.

*Medical Health Officer's Report.*

During the year the township has enjoyed immunity from epidemic and preventable diseases of all kinds. None of the public schools have required to be closed a single day on account of the incursions of zymotic diseases. Whilst germ diseases have been absent, still the public have suffered from other diseases quite as much as in former years; such as pneumonia, phthisis, dropsy, bronchitis, malaria, diarrhœa, liver disease, etc. The drainage of some low wet places in the municipality would add a good deal to the safety of the public health. During the year some attention has been given to wells, old and new bored ones, they have been sealed with cement to render them impervious to surface water, a source of germ disease. Some attention, before the advent of the warm season was given by many of our citizens to the removal of filth, manure, putrid, and decaying animal an vegetable matter from their cellars, outbuildings, yards and lanes, and this was followed up with a little lime. It has been difficult, however, to impress them with the practical belief that their water-closets, cesspools and other unsavory retreats should be disinfected at the beginning of warm weather, with strong solutions of copperas or something of the sort. In our village the irrepressible hog has been a little less prominent, and located a little farther from

the streets with his odors, etc. The hints at $20 fine perhaps, has some effect in combatting nuisances to a moderate degree. The butcher shops have been kept out of town to a proper distance, and the article supplied to the people has been fairly good. One dairy of some fifteen cows has supplied some of our village people with a good quality of milk. A cheese factory was erected in this township during the past year. I made it a visit and I found everything in a sanitary condition. During the year our health inspector rendered good service in enforcing the requirements of the law in public health matters.

M. T. HANEY, M.D.,
Medical Health Officer.

---

HIBBERT.

*Medical Health Officer's Report.*

I find the municipality has been pretty free from infectious diseases since last report.

We had one case of typhoid fever imported from Washington and another case in the family to which the latter belonged.

We had a number of children sick with whooping cough during the early part of last spring, the remains of the epidemic mentioned in last report. There were several pretty severe cases of diphtheria in the village of Staffa during last March, none of them however proved fatal. We took the usual precautions to prevent the spread of the disease.

Of course like other places we were visited by la grippe, which left a number of cases of pneumonia in its track, but we seemed to have the scourge lighter than many other places.

A. D. NASMITH, M.D.,
Medical Health Officer.

---

HINCHINBROOKE.

*Secretary's Report.*

The Local Board of Health has had no occasion to meet so far this year, nor have they met. The sanitary condition of the township is all that could be desired. There have been no contagious diseases in this locality since the influenza has disappeared. There have been no deaths to speak of. Two from old complaints hastened by la grippe, one from a contracted cold ended in consumption.

JOHN HAMILTON,
Secretary.

---

HARWICH.

*Medical Health Officer's Report.*

The death-rate of the year just closed has been greater than that of either of the previous two years, the increase being due to the epidemic of la grippe.

that visited the country in January, destroying many lives at the time and leaving many more too debilitated to ever rally from the shock. It will perhaps be another year before the mortality bill ceases to be affected by the results of the brief visitation of this mysterious and deadly disease, for which there is no remedy and no preventative, but which fortunately for the human race makes its disastrous circuits of the globe at long intervals.

There has been a marked absence during most of the year of what are known as the zymotic diseases, but an increased amount of malarial disease, due no doubt to the excessive wet and absence of frost during the past winter.

Within the past few weeks, however, a number of cases of diphtheria and scarlet and typhoid fevers have been reported, these last assuming the special types of winter typhoid, a very serious form of disease, which may continue to spread as the winter advances.

Just now the teacher of school section No. 13 is dangerously ill with this disease and on enquiry I find that there is no water supply for the school, that there are very few wells in the neighborhood of the school and none of these good, and that ottentimes in the autumn the children have to go to a half-dozen houses to secure a pail of very poor water. A fortnight ago diphtheria was found in school section No. 4 in an especially well regulated home with nothing suspicious around it. The water at the school was found to be absolutely unfit for human use, many of the pupils were carrying water from their homes and the balance were drinking from a ditch, which after all contained much better water than the well. The trustees were instructed that they must provide a supply of pure water for the school at the risk of having it closed. Two or three months ago diphtheria was reported in the guilds section. It broke out again a month ago in a number of houses, resulting in the loss of one life.

Instructions were given to close the school, and an examination of the well showed the water to be loaded with organic matter and unfit for use. Trustees were instructed to re-arrange the water supply and furnish a sample of it to health officers once a month for three months. The trustees of all these sections were recommended to resort to artesian wells. As the only reliable prospect of getting water that can be known as perfectly safe.

Only two schools in the township so far as I know are furnished with artesian wells. The matter is a very important one as at the schools almost every family in the township is exposed to dangers that may exist there, and I would strongly recommend our board during the coming year to take special cognizance of this important question by which more than one valuable life may be spared.

I have been called on twice during the year to adjust the question of water supply between owner and tenant, the law very wisely asserting that an owner must provide a good wholesome supply of water for his tenant, no matter what he may choose to drink himself.

I have investigated carefully the slaughter-house system in the township and find all these places carelessly managed. As they all belong to the town and none of them to the township, and as our board has recently passed some strong resolutions as to the manner of conducting them in the future, I would strongly advise that there be no relaxation in these proposed measures of improvement.

The members of our board may congratulate themselves that the general public are becoming rapidly instructed in all those sanitary matters that come within our province, and are in prompt readiness to do all that is possible to lessen the aggregate danger to human life. This fact is specially due to the prominence given to such vital topics in the journals of the day.

It is proper that I remind our board that one somewhat important source of food supply has been completely destroyed in the township, and that for many

years two of our most wholesome fruits cannot be restored to us except by the very energetic action of the township council, I allude to the general destruction of the plum and cherry trees by the fungoid disease known as black-knot, of which I took occasion to warn our board three years ago.

The general community do not sufficiently understand that the disease is the result of a fungus and not of an insect of any kind, and that until all the affected trees in the county are cut and burned or buried as the law directs, it will be useless to again plant trees to take the place of the many thousands destroyed. The neglect of any single individual in this as in many other matters will be at the expense of all around him.

JAMES SAMSON, M.D.,
Medical Health Officer.

---

## Hay.

*Chairman's Report.*

During the year there have been no complaints of a serious nature, and no notices of contagious diseases. The few unsanitary conditions complained of were removed without much trouble on our part.

The sanitary inspector made a tour of inspection to the various public schools throughout the municipality and he reported all in a fairly good sanitary condition. We would recommend that trustees of schools give a great deal of attention to the water supply, having reason to believe that water is often rendered unfit for use, which arises from many causes, one of the most prominent being improper covering of wells, which afford an entrance for mice and other small animals and insects. Hence we recommend that all school wells be cleaned out every year during the summer vacation. This, with thorough deodorizing of the cesspools would insure more safety to the children. The good sanitary condition of the township of Hay may be attributed in a great measure to the fact that the people are beginning to understand more fully the necessity of keeping their premises in better condition as called for in the Health Act, and we believe the education of the people in this direction would be more advanced by a liberal distribution of copies of the law itself. We further recommend that all epidemics and causes of contagious diseases be reported by medical practitioners to the Board of Health in accordance with the Public Health Act. Hitherto this has been neglected.

D. STEINBACH,
Chairman.

---

## Hamilton.

*Secretary's Report.*

I have great pleasure in stating that in consequence of the almost entire absence of contagion, and the generally healthy state of the township, the duties of the Board were rendered comparatively light, so much so that the Board only required to hold one meeting previous to the present session during the year. At our annual meeting held in February last, by resolution passed, I was instructed to procure one hundred and fifty printed notices to be posted up in conspicuous places throughout the municipality, calling attention to the cleaning of premises and the removal of all garbage or other deposits endangering the public health,

which, under the supervision of the Board in my opinion was well observed, and with few exceptions thoroughly carried into effect, and the township placed in a satisfactory sanitary condition. My attention has only been called to two cases formally, where the requirements of the Health Act had been violated, which, on notice being given was removed forthwith. The usual number of licenses and permissions to carry on such callings as require the same have been granted during the current year, and as far as I know have been acted upon strictly in compliance with the law. I feel sure that the fact of there being so few reports as to the violation of the Health Act during the year, will be very gratifying to all concerned. We do not claim that the happy state of affairs is directly attributable to the labors of this Board, but rather to the good sense of the people who read of the doctrines and philosophy of the laws of health. We commend those in authority for their endeavor to keep before the minds of the people the close connection that exists between people's health, care and cleanliness.

A. R. EAGLESON,
Secretary.

---

INNISFIL.

*Secretary's Report.*

I have much pleasure in stating that the health of the people of the township of Innisfil is good. We have had a light attack of diphtheria in Allandale, and only one case that I have heard of of typhoid fever. The sanitary condition of the township is good.

CHARLES PALLING,
Secretary.

---

KINLOSS.

*Secretary's Report.*

The sanitary condition of the township during the past year has been favorable to good health. Saving a few cases of measles, this Board has not learned of any infectious diseases having existed in this municipality during the past year.

Owing to the gratifying state of the health of the residents of the locality, the labors of the Board have been light.

PETER REID,
Secretary.

---

KINGSTON.

*Secretary's Report.*

One case of infraction of the Public Health Act occurred, one Edward Boddy, caretaker of the nuisance ground for the city of Kingston, having failed to look after the sanitary condition of the place as the law directs, was convicted and fined $8.00 and costs.

In respect to the health of the residents of the township, it is good. A few cases of diphtheria have occurred and the law in regard to the house and contents was vigorously enforced.

JOHN SIMPSON,
Secretary.

KEPPEL.

*Secretary's Report.*

I have much pleasure in reporting that during the present year the health of the township has been very good, not one case of infectious disease having been reported.

At the first meeting of the Board, the township was divided into four districts each of which were placed in charge of the member of the Board who resided therein, thus securing a complete supervision of the whole township. Owing to the excellent state of the public health, the work of the Board has been very light, it consisted chiefly in dealing with cases of nuisance as they arose.

GEORGE ATTREY,
Secretary.

---

LONDON.

*Secretary's Report.*

Complaints made about the disposition of night soil on lands in the township were investigated by the inspector, and the nuisance ordered by him to be done away with. Complaint was also made regarding a slaughter house on lot 16, in the 3rd concession. The inspector visited the place and reported to the Board that, though in his opinion, the site of said slaughter house was not a good one, it was kept as clean as possible. The Board met Nov. 8th. The report of the inspector regarding the above mentioned slaughter house was submitted, and several of those owning land or living in the vicinity addressed the Board respecting the same, after which it was resolved that the license granted for the same be revoked, to take effect on the 8th day of April next.

JAMES GRANT,
Secretary.

---

LAXTON, DIGBY AND LONGFORD

*Secretary's Report.*

The secretary of the Local Board of Health of this municipality begs to state that there were no contagious diseases of any kind during the year. This is a very healthy part of the province and no deaths, except from old age or those incident to very young children, have been returned to me.

WILLIAM MAXWELL,
Secretary.

---

LUTHER EAST.

*Secretary's Report.*

The township has been fairly free from disease and sickness of any kind, in fact there has been nothing of any serious nature excepting a few cases of diphtheria

From this cause two children have died. This took place in the latter part of the year and I understand the trouble originated by a young girl who was a servant in a family in Toronto where diphtheria existed. She came home sick with the disease to her people, who live in the township south of here, causing it to spread in a few families.

R. E. HAMILTON,
Secretary.

---

LOGAN.

*Secretary's Report.*

During the present year the members of the Local Board of Health had no necessity to exercise any uncommon vigilance, because nothing unusual occurred in the general sanitary condition of the inhabitants of the township. The municipality seems to be in a fairly healthy state; there have been no contagious or other diseases reported, and the report of our medical health officer is also to the same effect. It is pleasing to notice the watchfulness of the Local Board over all matters affecting the sanitary welfare of the community.

F. JACOB,
Secretary.

---

MARIPOSA.

*Secretary's Report.*

I beg to report that the general health of our township for the past year having been good, there has been no necessity of calling any special meetings of the Board.

Our Board passed a resolution instructing the inspector to see that rule 1 of the public health by-law referring to earth closets was carried out.

The report of our inspector shews that he has made 144 visits and examinations of premises in the villages situate in the township and has compelled the cleaning out of privy vaults and the removal of some, cleaning out of wells and cellars and the removal of manure heaps. He has also been careful to enforce the removal of pig-stys in the villages to a greater distance from the dwellings.

One very important part of our inspector's work has been the visiting of our school houses, school yards, and the examination of the wells on the school grounds. This part of his work has been carefully attended to, though in some cases it required a second and third visit. We deem this a very important feature in the work of an inspector in consequence of the amount of water used being only limited. During the summer vacation, in most cases no water being used at all, the water in the wells become stagnant and unfit for use. Our Board gave special instructions to the inspector to see that all impure water was removed from the wells before the re-opening of the public schools in the month of August.

Our inspector has again called the attention of the Board to a ditch in the village of Oakwood that has been dug, but has no outlet. This matter has been so perplexing to the inspector that he has written to Dr. Bryce, secretary of the Provincial Board of Health, asking his advice. Dr. Bryce's reply has been received and presented to the Board. As the members of the Board are all members of our township council it is presumed that they will act on the advice given, shewing that a remedy can be had by recent amendments to the Municipal Act.

The returns made by our medical practitioners shew that since my last report there have been 3 cases of diphtheria, 1 of which proved fatal; 2 cases of measles, 1 proved fatal; 6 cases of scarlet fever, all recovered; 3 cases of typhoid fever, all recovered. In the foregoing cases prompt measures were taken to prevent the spread of the diseases by placarding the houses.

JOHN H. CUNNINGS,
Secretary.

---

McLean and Ridout.

*Secretary's Report.*

We beg to state that the health of the municipality has been excellent during the past season.

We spared no pains in attending to the sanitary condition of the municipality.

We intend to give attention to the lowering of the water at the dam in Baysville next year. The Boom and Slide Co. lowered it too much, causing the decayed vegetable and animal matter to exhale noxious vapors. We confidently expect you to back us in this matter.

A. SLEMMONT,
Secretary.

---

Metcalfe.

*Medical Health Officer's Report.*

The public health of the municipality has been good, no epidemics have occurred. Several cases of typhoid fever have occurred, about twelve cases in all, with one fatal result. Most of these cases seemed to be complicated with more or less malarial fever. One case of scarlet fever was reported. The source of infection is not known. The physician in charge took the necessary precaution to prevent its spreading, although the house was not placarded.

No other contagious diseases have been reported. No complaints have been made of the sanitary condition of any part of the municipality.

E. M. COPELAND, M.D.,
Medical Health Officer.

MOORE.

*Secretary's Report.*

I beg leave to report that so far as I know, the sanitary condition of the municipality for the past year has been good. The general health of the people has also been good, and we have not been visited with any serious epidemic except some cases of malarial fever, which were not confined to any particular locality. In common with other places we had a visit from la grippe, but nothing serious.

JAMES WATSON,
Secretary.

---

MOSA.

*Medical Health Officer's Report.*

I would say that we have been exceptionally free from diseases of an infectious nature. Although there have been cases of measles, scarlet fever, diphtheria, yet these diseases on the whole have been of a mild type, and not of a nature to cause alarm under ordinary precautions. Officially I have had nothing to do during the present year.

J. WALKER, M.D.,
Medical Health Officer.

---

MAIDSTONE.

*Medical Health Officer's Report.*

I have pleasure in reporting that the general health of the residents of Maidstone has been very good during the year.

Only three cases of diphtheria occurred and none of scarlatina or other contagious disease so far as I have been able to learn. As a whole I may state the sanitary condition of the township is most satisfactory and reflects credit on the Local Board of Health as well for its effeciency as for its economy.

S. RICHARDSON, M.D.,
Medical Health Officer.

---

MEDORA AND WOOD.

*Secretary's Report.*

I have pleasure in stating that the sanitary condition of the townships of Medora and Wood has been unusually good during the year.

No contagious diseases have appeared in any part of the municipality.

H. C. GUY,
Secretary.

MARYSBURGH NORTH.

*Secretary's Report.*

We have had no contagious diseases and no complaints from any person or persons regarding sewage, cesspools or anything else. Our township is surrounded by water except on the west side; land high and rolling, and on the whole about as healthy as could be desired.

Our people generally object to the expense of a Local Board of Health, claiming that our sanitary condition is such that a local board is unnecessary. In consequence the Board has met but twice; first, to organize, and this time to report; and so far as the public health was concerned no meeting was necessary.

WM. HARRISON,
Secretary.

---

MIDDLETON.

*Medical Health Officer's Report.*

I am pleased to be able to state that the health of the township has been most satisfactory.

With the exception of an epidemic of la grippe during the winter months, no serious disease has been noticed. A number of deaths may be traced to that disease, complications having arisen in the later stages. These were mostly pneumonia, bronchitis and endocarditis.

During the summer a few cases of diphtheria of an unusually mild type occurred, but no deaths resulted. There was also, I am glad to state an almost entire absence of the usual diseases of children, such as cholera infantum, diarrhæa, etc.

A meeting of the Board of Health was held early in the year for the purpose of organization.

It having been reported that diphtheria and typhoid fever were prevalent in the western portion of the township another meeting was called in November.

Your health officer promptly visited the district and found no diphtheria, but three cases of typhoid fever. Two of these were convalescent, but the third died. Through the efforts of the board no further spread of the disease occurred. I attribute the disease in the first case to the fact that the house is built quite near to an old mill site, and although no marsh or stagnant water exists, the soil is made up of saw dust which had lain for years unmolested but had quite recently been ploughed.

Regular visits of inspection have been made to the premises of the Delhi Cheese Co., Delhi Fruit and Vegetable Canning Co., and the flour mills.

In conclusion I would beg to suggest that the law which requires physicians to notify the Secretary of the Board of Health of all cases of disease of a contagious or epidemic character occurring in their practice be more rigidly enforced, as through neglect of this duty many cases occur which might otherwise be prevented.

J. F. HONSBERGER, M.D.,
Medical Health Officer.

METCALFE.

*Chairman's Report.*

The public institutions of your municipality, namely, public schools and cheese factories have been closely looked after by our very efficient sanitary inspector, whose reports to our board from time to time have been very satisfactory indeed. Where changes or improvements have been suggested by this worthy officer, those in charge of the above named places have cheerfully complied in every particular, thereby putting their places in as good condition as possible for guarding the public health.

I am sorry to have to say that the sanitary condition of our township is not as good as it was at this time last year. We have had and are having at the present time a great deal of sickness, principally malarial fever, with isolated cases of scarlet fever. The latter was checked in its early stages, consequently no sericus results.

Notwithstanding the sickness through summer and autumn the death-rate has been very low.

J. BRENNAN,
Chairman.

---

MINTO.

*Medical Health Officer's Report.*

In presenting my annual report I must congratulate our board upon the freedom from contagious or infectious diseases which the township has enjoyed. There have been a few cases of typhoid fever, but in the opinion of the medical attendant in no instance has the disease been due to local causes. Two cases were contracted elsewhere, from one of which another family is supposed to have caught the disease. Proper precautions being taken the trouble was confined to these.

The cheese factories and slaughter houses have been kept in a manner highly creditable to those having them in charge and no complaints regarding them have been made.

W. A. HARVEY, M.D.,
Medical Health Officer.

---

MULMUR.

*Medical Health Officer's Report.*

I was notified by the reeve on the 13th of January to visit a shanty situated in a lumber district on the east town line. I did so on the 14th and found all of the children, four in number, and aged respectively four, five, six and nine years, down with diphtheria. The baby had died from the same disease, and the father had buried it the day before. The shanty was in a most dilapidated and filthy condition, which no doubt was the cause of the outbreak of the disease. It was impossible to secure other accommodation for the family, so they had to continue their residence in the shanty. By strict isolation of the premises the disease did not spread, and by a plentiful supply of disinfectants, with proper medical treatment, the children slowly recovered. I notified the owner of the shanty to burn it as soon as the family could be removed which he promised to do.

On the 26th of January parties visiting on lot 26, concession 3rd, had one of their children taken sick with diphtheria. The child no doubt contracted the disease on the journey somewhere, they having come from near Sarnia. The remises were at once isolated and the disease did not spread, although two others in the house took it. The three made a good recovery. We thoroughly disinfected the house after their recovery.

Influenza in an epidemic form visited the township during January and February. In the early summer there were a few cases of malarial fever, caused in my opinion by the fluxion of the wells due to the heavy rains.

R. LAWRANCE, M.D.,
Medical Health Officer.

---

McKillop.

*Medical Health Officer's Report.*

In submitting my annual report as medical health officer I have in the first place to congratulate the members of our Board of Health on the fact that during the past year there has been complete freedom from any serious or fatal epidemic. The cases of contagious diseases which have been brought to my attention have been in every instance sporadic in their nature, and through the care bestowed by those in charge have happily not spread beyond the households in which such diseases have appeared.

In the early part of the year the prevalence of influenza, or la grippe as it was commonly called, was widespread, but the large majority of the cases recovered within a short time. Some however, whose constitutions were weakened by the threatenings of pulmonary disease, developed phthisis, and have already or will yet become victims to that most fatal disease. This has, I regret to say, been the outcome of la grippe in every country, and the largely increased mortality statistics of all life insurance companies and beneficiary societies during the year are largely due to the fatal ravages of phthisis, following as a sequela to severe attacks of la grippe. To prevent the occurrence of such epidemics is probably beyond mortal power. No attention to sanitary regulations seemed to limit its bounds, visiting as it did with equal force the homes of the rich and the poor. During the attack itself there was with ordinary care but little danger, the fatalities occurring later through the development of pneumonia or phthisis. That in the later months of a year during which consumption has claimed so many victims in this and other countries, a discovery should be announced by which the ravages of that disease might be stayed, will in the event of success rewarding the efforts of Koch and his German co-workers, awaken the most sincere gratitude in every part of the world. Time alone can prove the true value of this now eagerly sought for remedy.

Several cases of diphtheria were brought to my attention during the early part of the year. Investigation revealed the fact that the cause of the disease was due to impure water, taken as it was from a well into which the soakings from a contiguous barnyard drained.

I have been pleased to note that in the erection of new school houses in the township every care has been taken by the trustees to provide healthy and cheerful school rooms with ventilation sufficient to provide an abundance of pure air for each pupil. To build up a healthy nation too much attention cannot be paid

to the physical well-being of those who are now receiving their intellectual equipment for life's duties in the future. School-room headaches will soon become a thing of the past if the class rooms are kept properly ventilated. I have to commend the action of our township Board of Health at the first meeting this year in appointing different members of the board to visit the several schools of the township and ascertain that the premises were in a thoroughly sanitary condition, and that the water supply was in every case pure and uncontaminated. Such action has without doubt been followed by good results.

Finally I have to express my satisfaction with the general interest shown by the people of the township in keeping their premises as free as possible from what might be a source of disease; and the growth of this ambition to have our homes and surroundings pure in every sense will do much to more thoroughly establish the sanitary reputation of this, one of the banner townships of our province.

R. W. BRUCE SMITH, M.D.,
Medical Health Officer.

---

MARYSBOROUGH.

*Medical Health Officer's Report.*

I am pleased to state that the health of the people in this township has been good. The sanitary rules have been well observed and no complaints of the existence of any nuisance have come to me.

During the winter months we had the la grippe epidemic, but in a mild form, as only two deaths occurred from it and these were complicated with pneumonia.

Only one case of scarlet fever in a mild form was reported. All the necessary precautions were taken, and the disease confined to the one member of the family.

There were six cases of typhoid fever, with one death. The cause in two cases could be traced to the use of bad water; in the others no cause could be found.

We have been free from diphtheria so far as I know during the past year.

Several cases of measles and whooping cough came under my notice; none others were reported.

J. IRWIN CASSIDY, M.D.,
Medical Health Officer.

---

MATCHEDASH.

*Secretary's Report.*

I am much pleased to be able to report a healthy condition of affairs in this municipality for the last twelve months.

Two cases of typhoid fever have been reported. On the appearance of these cases due precaution was taken to prevent any spread of the disease, and with care both patients recovered. The schools are reported in a good sanitary condition. The work of the Board has been very light. No nuisances have been reported which needed the interference of the Board. Medical men practising in townships by reporting cases of preventable diseases would be great public benefactors and be of great assistance to the local boards.

E. W. KITCHEN,
Secretary.

NEPEAN.

*Medical Health Officer's Report.*

During the first quarter of the year "la grippe" visited the community, and few escaped it. The disease seemed to be more severe among adults than children. No cases of death have been reported from it. I have not heard of any cases of scarlet fever, diphtheria, measles or chicken-pox during the past year. With regard to typhoid fever I am only aware of eight cases, five of which occurred at City View, three of these have entirely recovered and two are now convalescing, the sixth case was developed in Ottawa and removed to Mrs. George Holland's farm on the Richmond Road. Case number seven was developed at Britannia, and although not reported I have heard of her death, the case referred to is that of Mrs. Hand. Beside these I have heard of no others. I am obliged to report the negligence of the medical men to report their cases. With regard to the disposition of night soil no complaints have been made, and the contractors have given better satisfaction than heretofore.

J. W. SHILLINGTON, M.D.,
Medical Health Officer.

---

NICHOL.

*Secretary's Report.*

The secretary begs to report that so far as he can ascertain the sanitary condition of the township during the current year has been very good, no epidemic has to any extent prevailed and at present the general health is good.

In the early part of summer a party complained to the Board that the health of the residents in this neighborhood was greatly endangered and affected by means of a quantity of stagnant water not finding a sufficient outlet. The Board without unnecessary delay proceeded to the location complained of and having examined the ground all around resolved to report the matter to the municipal council and request that body to take immediate steps to remedy the matter; this having been remedied nothing farther was found necessary, the Medical Health Officer having expressed himself satisfied with what had been done.

At a meeting of the Board held afterwards the chairman reported that the municipal council had appointed himself and Mr. Clark, another member of council, to attend to the matter complained of a short time before, and that they had employed the municipal engineer, Mr. Bowman, to make a survey of the locality, who found about 18 inches of a fall. This on being carried out was found sufficient to remove the water except during heavy floods, but no stagnant water will remain.

JAS. McQUEEN,
Secretary.

NORTH CAYUGA.

*Secretary's Report.*

The sanitary condition of this township has been excellent during the year. No report or information has been received by the Board of anything existing anywhere in the township that would injuriously affect the health of the inhabitants.

JAMES MITCHELL,
Secretary.

---

NASSAGAWEYA.

*Secretary's Report.*

It affords me much pleasure to state that the duties of the Board of Health during the past year in our municipality have been merely nominal. The death rate of the past year has been exceptionally low, being only about 7 per 1,000 of the population. Until of late there has not been a case of contagious disease in this municipality. Last month we had three cases of diphtheria, one of which proved fatal. There were also three cases of typhoid fever, none of which proved fatal. In each of the cases mentioned the patients were completely isolated and the places thoroughly disinfected, so that only one case resulted in each house.

COLIN CAMERON,
Secretary.

---

NORTH CROSBY.

*Secretary's Report.*

I have much pleasure in reporting that the general health of this township has been good. There have been three cases of scarlatina in the village of Westport, all in one family, two of which proved fatal. As soon as the first case was reported to the Board they sent their Medical Health Officer to make an examination as to the nature of the disease and its cause. He reported that three children were suffering with scarlet fever of a severe form, that the disease was brought by the eldest child from Brockville and the others had taken it from her. Necessary steps were immediately taken to prevent the spread of the disease with the most satisfactory results.

Our Sanitary Inspector has regularly inspected the slaughter-house, the meat shop and the different cheese factories within the township and certified that they were in a proper sanitary condition.

JOHN McGUIRE,
Secretary.

---

NISSOURI WEST.

*Secretary's Report.*

I have to inform you that the work of our Local Board for the past year has been light, our township being comparatively free from contagious diseases. Our

Inspector visited several cheese factories and slaughter-houses on complaint of certain parties and enforced important improvements in connection with those places. He also compelled several parties in Thorndale village and neighborhood to clean back yards and hog-pens which have become a nuisance, the owners of the premises in every instance complying with the request of our Inspector. There have been two cases of typhoid fever in this locality, but our Medical Health Officer took the most particular pains to confine the disease and prevent its spread, in which I am happy to say he succeeded.

W. LEE,
Secretary.

---

NORMANBY.

*Secretary's Report.*

It affords me much pleasure to be able to report that the sanitary condition of the township has been entirely good during the year. No contagious diseases existed except a few cases of measles which occurred in the beginning of the year, all patients recovering.

Our Sanitary Inspector as usual inspected the villages of Ayton and Neustadt, the school section premises, slaughter-houses, the creameries and cheese factories (of the latter we have three and of the former two in the township), and found them all in a fair state of cleanliness.

GEORGE HOPF,
Secretary.

---

NISSOURI EAST.

*Secretary's Report.*

I have much pleasure in stating that the township is in the most favorable sanitary condition.

There has not been a case of contagious disease reported within the limits of the municipality.

That with the exception of organizing in the spring, the Local Board of Health has had no call to perform any duty except the ordering of the burial of an animal found dead on the highway.

That to the best of our knowledge the township is in an excellent sanitary condition.

JOHN GRANT,
Secretary.

---

NOTTAWASAGA.

*Medical Health Officer's Report.*

I am glad to report that during the present year the municipality has been exceptionally free from any serious epidemic or contagious disease.

In common with other parts of the province, during the months of January

and February we were visited by that peculiar epidemic generally known as "Russian influenza" or "la grippe," but it soon passed away, leaving no traces of its course behind.

In some sections of the municipality a mild variety of mumps and also of whooping cough has been prevalent.

A few cases of the malarial class of diseases were also brought under my notice, none of which however proved fatal.

L. McALISTER, M.D.,
Medical Health Officer.

---

OSNABRUCK.

*Medical Health Officer's Report.*

I am pleased to state that the health of the people in this district is comparatively good. Only one case of malarial fever has come under my notice this season. Owing to a more complete system of drainage which is being carried on in this district the number of cases of typhoid and malarial fevers has greatly diminished.

D. JAMIESON, M.D.,
Medical Health Officer.

---

ORO.

*Medical Health Officer's Report.*

It is with pleasure I can report to you the comparative freedom of our municipality from any dangerous forms of contagious diseases during the year. There were a few cases of typhoid, all seem to have done well. The disease in most cases would seem to have been contracted outside of our towhship, and the means used prevented its spread.

Of scarlatina little need be said. There have been no cases of any severity come under my notice in this township during the year, nor have any been reported to me.

Regarding diphtheria scarcely such a pleasing report can be given, for there are but few weeks together in the year but what some case appears, still there is no great spread of the disease. In most cases there was no way of positively ascertaining the cause. The cases occurred generally singly in different parts of the township, and at different times. There never seemed to be any cause for alarm in regard to its spreading.

The chief items in conserving the disease to such limits, it seems to me, were the isolating of each case as far as possible, and the free use of disinfectants.

W. H. CLUTTON, M.D.,
Medical Health Officer.

## Orillia.

*Secretary's Report.*

I am happy to again be able to congratulate our Board on the comparatively small number of cases of infectious diseases in our municipality during the present year.

The only cases that were reported were through the prompt action of the medical attendants, immediately isolated, and any chance of contagion thus avoided.

ALBERT FOWLIE.
Secretary.

---

## Oxford North.

*Medical Health Officer's Report.*

In common with the rest of the Province we were visited last winter by influenza or la grippe. The deaths occurring from this disease were very few in our midst, nearly all cases recovering.

I would respectfully call the attention of the Board to the dissemination of more knowledge in the municipality regarding the use of dry-earth closets. A few are annually being put up, but for want of knowledge of the importance of this subject many are still following out old plans for the reception and disposal of excreta. Nature's method of disposal is that the earth should have speedy and complete access to it. The Jewish sanitary law required the covering up at once of each passage in the earth. The dry-earth closet system is, I think, the nearest approach to perfection of any system yet offered to the public. It is simple, cheap, and gives little trouble, while it insures complete and immediate destruction of the excrement.

Only three cases of typhoid fever have come under my observation during the year. No cases of any epidemic or endemic diseases, except what has been reported under influenza.

J. McWILLIAM, M.D.,
Medical Health Officer.

---

## Ops.

*Medical Health Officer's Report.*

You will be pleased to learn that, as in former years, the health of the people of the township of Ops continues to be exceptionally good.

During the year but one case of diphtheria was reported. I am not aware of the presence in the municipality of any other form of disease that is contagious during the year.

Under these circumstances the duties of your medical health officer have been merely nominal, and my report is correspondingly brief.

THOMAS W. POOLE, M.D.,
Medical Health Officer.

OSPREY.

*Secretary's Report.*

The Board being fully organized is always ready and prepared to take the necessary steps for the removal of the cause and the isolation of cases of contagious diseases, should such be reported, but I am happy to say that not a single case of diphtheria, typhoid fever or any other contagious disease has been reported. La grippe and a mild form of measles were prevalent during the early part of the year, but there were no fatal cases.

I have much pleasure in reporting that the township of Osprey is enjoying at present, so far as I know, freedom from any disease of an epidemic nature.

THOMAS SCOTT,
Secretary.

---

PUSLINCH.

*Sanitary Inspector's Report.*

During the early part of the year this township was visited by an epidemic of influenza or la grippe which proved fatal to many, especially to aged people. A few isolated cases of diphtheria and typhoid fever occurred throughout the township during the year, none fatal. A number of cases of measles and whooping-cough occurred in Aberfoyle and vicinity, one ending fatally.

With regard to the sanitary condition of the township at the present time I am happy to state it is very good.

ANDREW MUNRO,
Sanitary Inspector.

---

PELHAM.

*Secretary's Report.*

In May Dr. Hanslie, of Fonthill, reported that a mother and child living in North Pelham were ill with scarlet fever. He cautioned them to keeping isolated and ordered the use of sulphur fumes. He did not placard the house as he had no cards.

Subsequently Dr. Comfort, medical health officer, placarded the gate. No report was received, but I think both recovered and no other families in the neighborhood contracted the disease.

In November Dr. Smith, of Welland, reported existence of three cases of diphtheria in two families in south-east part of township.

By mail forwarded to him placards to put up, and also asked him to direct them as to isolation, etc. Have learned nothing further from these cases.

In same month called the attention of the sanitary inspector to a dead horse lying exposed on property recently vacated by the person supposed to have owned the horse.

J. C. CROW,
Secretary.

PILKINGTON.

*Medical Health Officer's Report.*

In submitting my report for the township I regret to say that it is not as encouraging as the two previous ones. Diphtheria made its appearance in two families, three cases proved fatal. The disease was contracted in the township of Garafraxa. La grippe and measles prevailed throughout the municipality. One or two cases of typhoid fever of a mild type existed. The Board had some trouble with the owner of a slaughter house, it being a nuisance to the nearest neighbors. Step have been taken to remove the nuisance.

A. H. PAGET, M.D.,
Medical Health Officer.

---

PITTSBURGH.

*Secretary's Report.*

The Local Board of Health of this municipality have pleasure in reporting that the sanitary condition of the municipality is excellent, and only one complaint has been made of the existance of any nuisance to the Board during the present year, and steps have been taken to have the nuisance complained of abated.

C. BELWA,
Secretary

---

PETTEWAWA.

*Secretary's Report.*

I am very glad to report that the present sanitary condition of this township is splendid. About the last days of May a family was attacked by diphtheria and four children died. The next case was a little boy in another family, but he recovered, then we heard no more about diphtheria. We can give credit to the people for being very careful in such cases, the afflicted families being completely isolated.

SAMUEL DANNHAUER,
Secretary.

---

PICKERING.

*Secretary's Report.*

During the year the following number of cases of infectious diseases have been reported, viz.: Diphtheria 15, deaths resulting therefrom 2; scarlet fever 12, deaths resulting therefrom none; typhoid fever 4, deaths resulting therefrom none.

Some difficulty has been experienced in enforcing the regulations respecting

the cleaning and curing of fish at the village of Fairport. Our Board prohibited the curing of fish in dwellings or outhouses in the village and required that all such work be done in buildings constructed for the purpose on the beach, and made regulations for the disposal of the offal, and for keeping those buildings in a clean and sanitary condition. These regulations were generally complied with. One Thomas Mansfield, however, bid the Board defiance, and after having been notified repeatedly our chairman had him summoned before Police Magistrate Harper, who, after hearing a number of witnesses and the arguments of counsel, imposed on Mansfield a fine of $5.00 and costs. A part of the defence was that the defendant being licensed to catch and cure fish under a Dominion Act he was not amenable to any Provincial Act, the Public Health Act not excepted.

We are pleased to report that the sanitary condition of the township for the present year has been very good. There has been a large reduction in the number of cases of infectious disease reported.

D. R. BEATON,
Secretary.

---

RAINHAM.

*Medical Health Officer's Report.*

I am pleased to state that this township has been almost entirely free from those infectious diseases generally found in this section of country. We had a few cases of what was supposed to be scarlet fever, but by prompt isolation and sanitary measures the disease ceased to spread. The Board had occasion to inspect a few places reported to be nuisances, but by kindly requesting the proprietors of them to remove certain objectionable features our wishes were readily complied with. Generally speaking the inhabitants are disposed to execute the suggestions of the Board.

J. FRY, M.D.,
Medical Health Officer.

---

RYERSON.

*Secretary's Report.*

With the exception of measles, which prevailed for some time in various parts of the township, there have been no infectious diseases during the year. The general health is good, and the municipality is in an excellent sanitary condition.

EDWARD GEDDES,
Secretary.

---

RADCLIFFE AND RAGLAN.

*Secretary's Report.*

Early in the year there were a considerable number of cases of mumps, but none of a serious nature.

There have been no cases of typhus fever, and but one mild case of a malarial character, in one house, where the cellar was flooded.

With these exceptions the health of the two townships composing this municipality has been quite satisfactory.

I have to notice, with satisfaction, that the dam on the Madawaska, at Palmer Rapids, below the village of Combermere, has been considerably lowered; and it is te be hoped, that when the dam (now in course of construction) at the foot of Bark Lake is completed, the Palmer dam will be dispensed with altogether. If so, it will leave the river at Combermere free in its natural channel.

J. E. H. MILLER,
Secretary.

---

RICHMOND.

*Secretary's Report.*

The Board had three meetings during the year. At the April meeting they authorized the secretary to procure a certain number of notices for posting in different parts of the township, requiring all persons to clean up their premises, and put the same in a thorough sanitary condition, all of which was complied with in a very satisfactory manner. During the early part of the season an epidemic known as the German measles broke out in different sections of the township and seemed to spread rapidly, but being of a mild type, little or no effort was made to check it; therefore, no assistance was applied for. As far as known no deaths occurred from it. Recently an isolated case of typhoid fever occurred, which proved fatal, but the attention of the Board was not called to it as no help was required. At present I know of no sickness of a contagious nature in the township, nor anything requiring the attention of the Board.

ABRAM WINTERS,
Secretary.

---

ROCHESTER.

*Medical Health Officer's Report.*

I have to congratulate our Board of Health on the immunity from contagious diseases enjoyed by the municipality of Rochester during the current year, for, beyond two cases of typhoid fever, one of which having proved to be of a mild type, and the other, although serious in its infection, did not, however, prove to be fatal. These were properly and promptly quarantined with the happy result of putting an end to the disease.

It is gratifying to know that the sanitary condition of our municipality has been good throughout the whole year. Only two cases of cerebro-spinal fever or meningitis have broken out, but fortunately not in an epidemic form, and only one of them proved fatal, the other is now convalescent.

It is encouraging for me to be able to state that no epidemic has existed in any form throughout the township, except a few cases of whooping-cough and measles, which have been prevalent in some parts of the township, but of a mild form and seldom requiring medical treatment, in fact whooping-cough and measles are not very serious diseases amongst a healthy rural population, of which this district is chiefly composed.

D. BECHARD, M.D,
Medical Health Officer.

RYDE.

*Secretary's Report.*

The general health of the people of this township during the present year has been good; no diseases requiring the attention of the Board or of the medical health officer, having been reported.

W. TINGEY,
Secretary.

---

SARAWAK.

*Secretary's Report.*

The death rate of this municipality was higher in 1890 than for some time previous, owing to la grippe last winter and some fevers akin to typhoid and scarlet fever, in the earlier part of the spring and summer. The health of the municipality during the latter half of the year was fairly good. No contagious diseases were reported. The benefits of good sanitary conditions have been impressed on the minds of the people, and the Board of Health and their officers have the co-operation and assistance of all intelligent people in the municipality. The Board have been favored with an excellent chairman, since the Board was organized, in the person of Wm. Roy, Esq., of "Royston Park," who spares no pains in looking after the health of the municipality and assisting to lessen the suffering of those unfortunate to be overtaken with disease.

JOHN MACKENZIE,
Secretary.

---

ST. VINCENT.

*Secretary's Report.*

The Board is pleased to be able to report the health of the people in the township as being generally good throughout the year. Diphtheria has shown itself within this week and one death is stated to have occurred from that disease, but has not yet been officially reported to the Board. Earlier in the year scarlet fever prevailed in one or two localities for a short time, but no death from it is recorded.

JOHN ALBERY,
Secretary.

---

SULLIVAN.

*Medical Health Officer's Report.*

It gives me pleasure to state that the sanitary condition of the township as been exceptionally good since last report, for with the exception of an pidemic of la grippe in the early part of the year, we have not been visited with a single case of any infecticus disease of a dangerous nature. This community suffered from the ravages of la grippe, and although the disease was

not attended with so many fatal consequences as in cities and towns, nevertheless nearly every case of death that took place during the first half of the year was directly or indirectly attributable to this affection. The aged especially suffered, few of them escaping the disease altogether. A few cases of Rotheln occurred but none of them terminated fatally. Not a single case of diphtheria, typhoid, or scarlet fever has been reported to the Board during the year, certainly a very satisfactory state of the sanitary condition of the township. The different school-houses and privies in connection therewith received attention during the summer vacation, thus tending materially to the health and comfort of the pupils in atten dance. The efforts of the Board appear to be appreciated by the public.

GEO. J. DICKISON,
Secretary.

---

SENECA.

*Medical Health Officer's Report.*

My annual report for the past year differs but little from the preceding one. The health of the township has been very good, and the death-rate, according to my information, unusually low; but there are some drawbacks. Pigs are, in some places, kept too close to dwelling houses, and are by some owners, allowed to run on the roads. It is not the duty of the health officer to initiate prosecutions, but where by-laws are enacted, in the public interest, they should be enforced. Some of the lands in Indiana, and York, need cleaning, and stagnant water drained off.

There has been no epidemic, neither have any cases of measles, scarlet fever, or diphtheria been reported.

ROBT. H. DAVIS, M.D.,
Medical Health Officer.

---

SUNDRIDGE.

*Medical Health Officer's Report.*

I am sorry to state that during the past year we have not enjoyed entire immunity from infectious diseases. No doubt the promptness and energy of our Local Board, acting as they did, prevented their further spread, and it is extremely gratifying to state that only one death resulted from infectious causes in our midst.

*Influenza* (*La Grippe*).—This free enemy reached us in full force. Notwithstanding its frequency, (about two-thirds of our population contracting it) we escaped without a death being traced directly or indirectly to its influence.

*Typhoid Fever.*—When a few persons in the community are attacked with this disease, the many rumours and exaggerated statements spreading through the country, leads the public to think that multiplied cases exist around them.

The truth of the matter is, in the spring a few persons contracted the disease in one of our hotels; during this time of the season, decayed vegetable and organic matter is exposed to view, pools of unwholesome surface water is lying around, as in this case, sanitary conditions of the hotel were not good, the stables in too close a proximity to the hotel, pig pens in the stable, water-closet too close

to the well, too careless disposal of slops (both bed-room and kitchen), running of surface water into the well, improper ventilation of the house, damp cellars, etc.

The Board of Health took the matter in hand; now all these means of infection have been abolished and no cases have occurred since, either there or in any house in the community.

Only one death occurred from the disease here; I believe one death occurred in another locality sometime after the person reached home.

Some seven or eight cases could be traced back to the hotel—where undoubtedly they received the germs into the system.

No diphtheria or scarlet fever cases have been reported.

Measles were very prevalent during the spring and early summer months, not only among children but among the adult population. No cases resulted seriously.

Our slaughter house is removed about half a mile from the village.

The inhabitants of the place as a rule obtain a great portion of their water supply from flowing springs, the water as a rule is excellent. No cases of infectious diseases have been attributed to impure water from these springs.

Part of our corporation is somewhat boggy and springy, underlying this is quicksand and clay.

We have a natural system of drainage into Stoney Lake.

The drainage system will be vastly improved when our young corporation is in a position to do so.

F. HASTINGS STARR, M.D.,
Medical Health Officer.

---

STISTED.

*Secretary's Report.*

The sanitary condition of the township is good. There have been no complaints made to the Board. The members have not seen fit to appoint a Medical Health Officer for this township, they don't think it is necessary to do so.

T. LAKEMAN,
Secretary.

---

STEPHEN.

*Secretary's Report.*

There has not been a single case of contagious disease in this township this year to my knowledge. Measles have been in neighboring municipalities, but we have escaped. Our inspector sees that his portion of the work is faithfully done, and as the Board of Health is composed of persons located so that every portion of the township is represented, and as each member is alive to the benefits derivable from a strict conformity to the sanitary regulations, there is but little danger that anything anti-sanitary will get any great advantage over any member of Stephen's Board of Health.

C. PROUTY,
Secretary.

SHERBROOKE.

*Secretary's Report.*

I have much pleasure in stating that the sanitary condition of the municipality for the current year has been extremely satisfactory. With the exception of a visit la grippe last spring, and which ended with no serious results, no serious contagious disease has prevailed. There has been some two or three cases of a very mild type of scarlatina, but with no fatal results. It has not been necessary to call the Board of Health together during the year. There has only been two deaths reported in the township during the year thus far, one from cholera infantum, and one from old age.

WM. CHALMERS,
Secretary.

---

SYDENHAM.

*Medical Health Officer's Report.*

In making out my report for the present year, I have much pleasure in stating that although we have been visited by a number of epidemics, yet the death rate from them has been very low.

The first one to attract our attention was la grippe, which was looked upon at first with indifference, but before it passed away proved to be a very serious disease. In my own practice I have had no deaths directly from it, though many cases proved very stubborn, and no doubt dregs still remain that will materially shorten life.

The next epidemic to come under our notice was a severe type of measles, which was brought here by a person coming from the States where it was at the time. Some cases suffered severely, but as far as known all recovered.

The first case was strictly isolated, but the second was allowed to go at large, and the disease spread rapidly making it soon impossible to control.

The third epidemic was a severe form of diphtheria traceable to Owen Sound. Some ten or twelve cases came under our notice, all of them recovered, with the exception of one case. They were all strictly isolated, and although the disease broke out in several places about the same time it spread very little, and was soon under control. We have also been informed of cases of scarlet fever and whooping cough, but have had no reports of any deaths from them, and none have come under our notice.

The next we have had to contend with was malarial fever. We have had six cases, none of them passing into the typhoid form, all recovered.

At present we have a case of diphtheria which is strictly isolated. Owing to the fact that the disease was far advanced before it was detected, and quite a large number of the patient's schoolmates having been exposed, I advised the trustees to close the school for a short time to see if it would break out among them, They did so, and up to the present time there are no new cases. The case so far has done well, and if the patient still continues to improve will soon be out of danger.

In addition to those we have had a number of deaths from other causes.

Therefore you see, from our report, we cannot boast of the township being free from epidemics during the past year, still we can boast that they carried with them very few victims.

A. C. SLOANE, M.D.,
Medical Health Officer.

STAMFORD.

*Medical Health Officer's Report.*

No cases of diphtheria, scarlet fever or measles have been reported to me by any medical man this year. One of measles occurred in my own practice.

During the winter la grippe prevailed to a very large extent. In many cases terminating in pneumonia. Three in my practice were double; two of the three ending fatally in a few days.

An epidemic of hog cholera broke out during the summer and extended to several farms. A meeting of the Board was held and the secretary of the Provincial Board notified, when several veterinary surgeons were consulted.

The usual examination of slaughter houses, cow byres, etc., were made by the inspector. The report was generally favorable.

JOHN M. DEE,
Medical Health Officer

---

SANDWICH EAST.

*Medical Health Officer's Report.*

I am glad to be able to state that for the last year there have been very few cases of infectious or contagious diseases in the township. I am also pleased to state that the sanitary condition of the township is excellent.

H. R. CASGRAIN, M.D.,
Medical Health Officer.

---

SUNNIDALE.

*Medical Health Officer's Report.*

During the months of January and February an epidemic popularly known as la grippe visited the township and affected almost every family. In some cases the symptoms were of a very alarming nature, but so far as I am aware no deaths occurred. In this township, which is decidedly malarial, the greater number of the cases presented marked symptoms of that trouble.

During the summer months we were remarkably free from disease of any form, much more so than in previous years. Not a case of diphtheria, scarlet fever, measles or typhoid fever has been reported. Whooping cough of a mild type prevailed during the months of September and October.

On the whole, the public health has been above the average.

G. HUNT, M.D.,
Medical Health Officer

SAUGEEN.

*Medical Health Officer's Report.*

From the 1st of January, 1890, to the 1st of December, 1890, the number of deaths recorded were 13. Three of these deaths ensued from consumption, and two la grippe.

The death rate is 8 per 1,000.

No contagious disease has been reported.

J. A. PATERSON, M.D.,
Medical Health Officer.

---

SOUTH EASTHOPE.

*Medical Health Officer's Report.*

I may state that our township has been tolerably free from epidemic diseases which are preventable. Four cases of diphtheria came to my notice, all in one family, three of the patients were down before medical aid was sought. All recovered, and by strict isolation and thorough cleansing afterwards its further spread was prevented.

There were some cases of measles in and around Tavistock, all of which, I was informed, recovered.

Some complaints were made during the hot weather of the unsanitary condition of the slaughter houses, which the owners, on being spoken to, agreed to look after and leave no cause of complaint.

R. WHITEMAN, M.B.,
Medical Health Officer.

---

SOUTHWOLD.

*Secretary's Report.*

I beg leave to state that this municipality has been highly favored during the year. There were a few cases of a mild type of scarlet fever reported from the western portion of the township, one case proved fatal. The attending physician acted the part of sanitary officer, and if more physicians would do likewise, it would serve a good purpose, I learned also that there were two cases of typhoid fever in the municipality, but the attending physicians failed to report the same, one case proved fatal. The Local Board of Health held three meetings during the year. The usual inspection of slaughter houses, cheese factories, dairies, schoolhouses and school premises was made by the Board of Health, all of which were fonnd satisfactory, with the exception of a few places.

M. CAMPBELL,
Secretary.

SOPHIASBURG.

*Medical Health Officer's Report.*

The sanitary condition of the township is good, and the general health of the people during the year has been very satisfactory.

Within the past twelve months I have received no notice of any cases of infectious or contagious diseases, and I only know of one or two cases of scarlatina of a mild form, which needed very little treatment.

J. CRYAN, M.D.,
Medical Health Officer.

---

SCOTT.

*Medical Health Officer's Report.*

I have great pleasure in recording a year of good health for the township, generally speaking. In the beginning of the year the influenza epidemic was general throughout the township, but was of a transient character, few cases being of a serious nature.

Typhoid fever, diphtheria, scarlet fever and all other infectious diseases have been almost unknown in the western portion of the township, but a few cases of typhoid and diphtheria have occurred in the eastern portion. One or two cases probably of each disease proving fatal. During the present month diphtheria has been spreading slightly. The work of the Board of Health has been very light during the year, and principally of a charitable nature.

Good attention however is given to the sanitary affairs of the township.

W. ARMSTRONG, M.D.,
Medical Health Officer.

---

TILBURY WEST.

*Medical Health Officer's Report.*

This township has been exceptionally free from all contagious diseases, such as smallpox, diphtheria, etc.

A few mild cases of typhoid fever and measles have been reported, but no serious cases nor fatal cases have resulted.

A communication was handed me stating that the farm of Hamilton Hannah was in an unsanitary condition, and on investigating, I found several decaying bodies of cattle and hogs, which I ordered to be immediately buried, and my request being complied with no further action was taken in the matter.

I would say that more care should be exercised in compelling parties owning water closets to have them regularly cleaned and disinfected, for which purpose ashes answer well if properly used.

The drainage of the villages should be improved, as much stagnant water as well as animal and vegetable decaying matter, are fruitful causes of disease.

C. A. ANDERSON, M.D.,
Medical Health Officer

TURNBERRY.

*Medical Health Officer's Report.*

With the exception of an epidemic of influenza—la grippe—the municipality has been, during the year, very healthy, and as far as I know, quite free from any infectious diseases.

No complaints have been made to me on any subject relating to the public health.

W. B. FOWLER, M.D.,
Medical Health Officer.

---

THOROLD.

*Medical Health Officer's Report.*

In presenting to you the result of my labours during the past year, I beg leave to state that it has been the most uneventful year since the establishment of the board in this municipality. A few complaints have been made to me which have been attended to, and in most cases matters were easily adjuste to the satisfaction of all parties concerned.

The sanitary condition of the township is as perfect as it is possible to have it.

We have been free from epidemic diseases with the exception of an outbreak of diphtheria in Port Robinson and vicinity, but by exercising the greatest precaution against its spread, it was limited to a few families, one death only occurring, the other cases being of a comparatively mild form.

H. PARK, M.D.,
Medical Health Officer.

---

TORONTO.

*Secretary's Report.*

The Local Board of Health take much pleasure in stating that their duties for the year have been quite nominal. The sanitary condition of the township was good until a short time ago. I have learned that there are several cases of diphtheria in the village of Springfield, and also in Port Credit. I have been informed that the Medical Health Officer was attending them. In the early portion of the year I received a complaint in reference to a case of diphtheria, being in a hotel at the Streetsville Junction of the C.P. Railway. There was a doctor in attendance. I therefore consulted him, and learned it to be a case of diphtheria of a malignant kind, which caused one death. It being in such a public place I immediately placed cards on the doors of the hotel and sheds. The doctor and I ordered the clothes to be burned, which was done by a very stout young man, and he died of the same complaint soon after.

J. EAKINS,
Secretary.

TUCKERSMITH.

*Chairman's Report.*

It gives us much pleasure to be able to state that during the year the sanitary condition of the township was good.

There were no complaints of a serious nature, and no reports whatever of contagious diseases. This may be attributed, in a great measure, to the fact that the people now are beginning to understand more fully the necessity of keeping their premises in a better sanitary condition, as required by the Health Act.

And should we be allowed to make a suggestion, it would be to educate the people more fully, by having some copies of the Health Act distributed through the township.

The few complaints brought to our notice were rectified by the parties complained of without much trouble on our part. We would recommend, in the interest and safety of the rising generation, that the school-house privies receive more attention. Disinfectants should be used several times throughout the summer season, and cleaned out at least one a year; or better still, to have the privies changed and fresh pits dug and the old pits filled up.

We would also beg to bring to your notice the great necessity of having a more strict surveillance in respect to the water used for school purposes, as the water is often unfit for use. It should be made obligatory on the trustees or Board of Health to have the wells cleaned out once a year, during the summer vacation. This necessary precaution should be made peremptory.

The board would also bring to your notice the careless manner in which graves are permitted to be dug, more especially when such grave yards are situated at or near a village; the fact is apparent, where there is no regularly appointed grave digger, every person may get the grave dug to his own fancy. It seems there is no statute to define the depth of graves.

JACOB McGEE,
Chairman.

---

UXBRIDGE.

*Medical Health Officer's Report.*

The sanitary condition of this township for the past year has been fairly good.

Early in February scarlet fever visited one family and proved fatal to one child. The house was thoroughly disinfected, and the affected child isolated as well as possible. So the remaining occupants, which were chiefly children, escaped.

In September diphtheria broke out in another family, and went through the whole household, but was attended by no deaths. Strict attention to the "Public Health Act" was observed. No one was admitted on the premises, and those on were allowed off as little as possible.

It appeared in another family about three miles distant, and was confined to one child, who recovered.

So for the year ending November 15th, we have had, to the best of my knowledge, one case of scarlet fever proving fatal; and nine cases of diphtheria, none of which were fatal.

E. GIMBY, M.D.,
Medical Health Officer.

VESPRA.

*Secretary's Report.*

I have much pleasure in reporting that the health of the residents of the township has during the year been satisfactory.

The sanitary condition of the township has been well looked after by the proper officer, who, when nuisances have been reported to him, has caused them at once to be abated.

GEO. SNEATH,
Secretary.

---

WALPOLE.

*Secretary's Report.*

I have much pleasure in stating that our township has been comparatively free from infectious diseases. Two cases of typhoid have come under our notice, neither of them fatal. Several cases of scarlet fever were reported, one terminating fatally. Precautionary measures were taken, and the disease confined to three families. Beyond the few cases enumerated, the health of the township has been exceptionally good.

JAMES MOWAT,
Secretary.

---

WATERLOO.

*Secretary's Report.*

The second meeting of the board was held at the Township Hall on 27th of June, at which complaints were made by several residents along the stream known as "Snider's Creek," which flows from the town of Berlin through the township of Waterloo to German Mills and Doon, where it empties into the Grand River. There was a large representation of the complainants present, who claimed that a large quantity of offal and sewage was deposited in said creek by residents of the town of Berlin, which polluted the water thereof to a very great extent. The board instructed the secretary and inspector to procure fair samples of the water, and send the same to Prof. Saunders, of Ottawa, for analysis. This was done, and Prof. Saunders reported that on examination he had found a large quantity of decaying vegetable and animal matter, and the *bacilla* from excreta and general sewage in each of the samples sent, the presence of which would have a direct tendency to pollute the water and render it unfit for the use of either man or beast, and in his opinion the use of the same, or even its proximity, might and would, eventually be very deleterious to the health of the residents and stock along the line of its course.

In accordance with the resolution of the board, passed subsequent to the receipt of the report of Prof, Saunders, the secretary notified the Local Board of Health of the town of Berlin, which also received a copy of Prof. Saunders' report, and requested to know what steps the Local Board of Health for the town of Berlin had taken or intended to take to abate the aforesaid nuisance.

We are informed that the town of Berlin are taking steps and endeavoring to perfect some comprehensive scheme for the complete sewerage of the town, and in the meantime the nuisance complained of has been abated to a reasonable extent.

We are pleased to be able to report that the general health of the inhabitants of this municipality for the past year has been good, there being no more than the average number of deaths. There were a few cases of typhoid fever of a mild nature. Also isolated cases of measles and diphtheria, but no more, if so many, as in former years.

GEORGE A. TILT,
Secretary.

---

WESTMINSTER.

*Secretary's Report.*

We had more than double the average number of deaths the first three months of this year, principally from lung diseases. Since then the health of the township has been about as good as usual, except that there has been many complaints of the after effects of la grippe, also a number of serious cases of malarial fever although few of them proved fatal. There has been a number of cases of scarlet fever but none fatal. We have attended to a number of cases of nuisances and our sanitary inspector has had several persons fined for creating nuisances by drawing night soil from the city and depositing it in the township. An appeal is now pending in one of these cases against the decision of the magistrates.

We have got rid of the most troublesome part of our duties since London South joined the city of London. We do not anticipate much trouble in future.

HENRY ANDERSON,
Secretary.

---

WOLFORD.

*Secretary's Report.*

I have again, as in 1889, to apologize for the negligence of our local Board in not making out their annual report. Our municipality has been entirely free from any contagious diseases during the past year, and no complaints have been made of any violations of the Health Act. Our report therefore, if regularly made, would simply be based upon these circumstances. Please accept this statement in lieu of our annual report.

H. M. BROWN,
Secretary.

## Wilmot.

*Medical Health Officer's Report.*

It gives me much pleasure to state that the municipality is free from any serious infectious diseases. With the exception of la grippe which was pandemic rather than epidemic, we have had during the year but few cases of contagious diseases, viz: diphtheria, typhoid, whooping cough and scabies, all of which were of a mild type. No measles, scarlet fever or smallpox have been reported.

I have been called into several Public Schools to ascertain the existence of scabies or itch in a number of suspected cases. After a couple of weeks' absence from school and treatment the pupils returned free from the disease.

Altogether we have to congratulate ourselves on the healthfulness of our township and its freedom especially from infectious diseases But, whilst so fortunate, we must not forget that in regard to matters of sanitation eternal vigilance is the price of liberty and freedom from disease. Pure drinking water, uncontaminated by the soakage of privy pits, manure yards, pig styes and cesspools; sweet and well drained cellars, unpoisoned by decaying vegetables (in fact better stored in out cellars); milk and meat obtained from animals above suspicion of disease; ventilation and cleanliness in our homes and persons; isolation and disinfection in contagious cases are all matters of momentous importance to each individual of the community. They who pay no heed to these facts which common sense, daily experience and science have demonstrated, slumber over a veritable volcano which is liable any day to break out and overcome them with disease and death.

That efforts of our Board have been successfully directed toward the preservation of the health of the community is evidenced by its present state.

W. R. NICHOLS, M. D.,
Medical Health Officer.

---

## Wainfleet.

*Medical Health Officer's Report.*

During the year the health of the township was better than for the previous year. Scarlet fever broke out on the Forks road in the family of a minister, but by the Board's prompt action it was kept from spreading any further. In the next township west, which is low and swampy and which has only a part of a Health Board, it broke out about a month afterwards and kept spreading wider and wider until it reached our township, and is at present in a large number of families. Its headquarters are along Lake Erie where the houses are close together and the families being related to each other mix together, a state of affairs very conducive to the spread of any contagious disease. In some places where it is not serious no physician is called in and consequently no report of it made to the Board. Unless a house to house inspection is made it is impossible to know just how prevalent it may be. No deaths have yet occurred from it. The people do not object any more as they used to do in having their houses placarded. We have also an epidemic of measles in two school sections; the schools

have not been closed on account of it as nearly all the pupils who had not had measles before were down with it at the beginning of the outbreak. But one case of typhoid fever has been reported during the year and that case ended fatally. It was in a low swampy locality that has never been drained properly. No other contagious disease has been reported during the year. The privies in the village of Marshville along what is called the back drain should receive some attention from our Board. The parties concerned should be requested to disinfect with lime or some other material at least during the hot summer months as they were a terrible nuisance during the past summer rendering the neighborhood unhealthy. The same may be said of a few pig pens through the township placed along the roads. The stench from them on some calm nights is very obnoxious, and if the population was thicker would be still more dangerous to the general health.

The Board has met during the year, but should I think be called together once at least every year in June or July to discuss the sanitary condition of the district and direct such measures to be taken as would abate any nuisances that exist from time to time.

W. B. HOPKINS, M.D.,
Medical Health Officer.

---

WAWANOSH EAST.

*Medical Health Officer's Report.*

I have to report that the health of the residents of this township for the year has been exceptionally good with the exception of a mild form of measles. We have been exempted from disease, endemic, epidemic or contagious, and we may heartily congratulate ourselves upon our favored condition in this respect. I may say further that the Board of Health is properly organized, but that during the current year no case has arisen requiring their interference.

WM. SLOAN, M.D.,
Medical Health Officer.

---

WHITCHURCH.

*Secretary's Report.*

We beg to report that the general health of the residents of the municipality for the current year has been fairly good. We have had some cases of scarlet fever and diphtheria, and very much regret that some of them proved fatal. Due care is always taken to prevent the spread of any contagious disease when it makes its appearance in the municipality.

J. C. LUNDY,
Secretary.

WAWANOSH WEST.

*Medical Health Officer's Report.*

I may say that the sanitary condition of the township has been good during the year. The only thing of special mention being the prevailing epidemic of la grippe, leaving only a small percentage of inhabitants who were not able to describe its symptoms. With its complication it caused quite a number of deaths. The mortality rate of the township is higher this year than for a number of years past, among the deaths quite a number of the township's worthy old settlers. No complaints of contagious diseases or nuisances of any kind having been made leaves the Board for the year without any practical experience, for which they are exceedingly thankful.

D. M. GORDON, M. D.,
Medical Health Officer.

———

WOOLWICH.

*Medical Health Officer's Report.*

The seventh year of Board of Health work in this township has about closed. In all these years we have not had a really serious epidemic and the death-rate has nearly always slowly but steadily decreased. The most noticeable feature this year has of course been the grippe, but we have not suffered in this township nearly as much as those in other parts of our own country, and nothing in comparison with what has happened in other parts of the world. It has been estimated that more people have died from la grippe than from any other epidemic this century. We have had only three deaths from this disease. Diphtheria also paid us rather more of a visit than usual. All the physicians in the township have had to attend more or less of it, and have all been very successful particularly when called in in the early stages. This can be seen from the fact that there were only two deaths. A few cases of typhoid and one death. The total number of deaths is 37 in a population of 4,400, or $8\frac{1}{4}$ per 1,000, which if we could keep at this rate would make average age about 60.

There were three meetings of the Board of Health, on February 3rd, June 27th in St. Jacobs, and on October 21st at Conestogo. More complaints than usual this year, viz., eight. In all cases new pig-styes are promised to be built at the required distance next spring. I visited all the villages and all the schools in the township, the condition of premises in all being clean. Two have no wells yet and at one the well water is bad. For the first time all the privies were clean or had been lately cleaned. At the last meeting of the Board I was instructed to notify all the school teachers to place a thermometer in front of their desks about three feet from the floor and see that the temperature was kept at about 70 degrees and not less than 68 degrees. I sent notices to all the schools. In conclusion I would say that I have tried to carry out the wishes of the Board without making things too unpleasant for those complained against. We are at the present time in the midst of an epidemic of measles with no deaths.

W. J. PASMORE, M. D.,
Medical Health Officer.

WILLIAMS EAST.

*Secretary's Report.*

There has not been a case of infectious disease in the municipality during the past year. The epidemic la grippe has been very general and in a number of cases fatal—nearly one-third of all the deaths being attributable either directly or indirectly to that disease. With this exception the general health has been most satisfactory.

D. WYLLIE,
Secretary.

---

WELLESLEY.

*Medical Health Officer's Report.*

In a series of years remarkable for the exemption from the class of diseases that come under the jurisdiction of the Board of Health, the present year has enjoyed an exceptional degree of immunity. With the exception of la grippe, which was almost epidemic in the early part of the year and well on into the summer, and which created considerable havoc among its elderly and aged victims, there has practically been no sickness except promiscuous and generally insignificant cases of indisposition. Typhoid fever and diphtheria have not put in an appearance at all, though a few mild evanescent cases of typho-malarial fever have cropped up. Of infantile complaints there were practically none. "Summer complaints" gave us a complete "go by," and in my own practice I have only one infant's death to record; while the average age at death of those under my personal observation is 76 years. This I am informed is about the experience of other medical practitioners within this jurisdiction. The slaughter houses, cheese factories and cider mills are living closely to the law. Our chief concern during the past few months has been fighting actinomycosis, and several animals have been condemned and destroyed. The Board of Health has just now an action pending in court against a man who slaughtered and sold the meat of an animal so affected. On investigation I find that this disease is much more common than is generally supposed, and it is to be feared that many of these animals are surreptitiously sold as meat, for the dealers in beef cattle uniformly reject them. I have sent a specimen of the head of the animal above referred to to the Provincial Board of Health, and will in due time be able to report the result of a scientific examination of it.

WM. MORTON, M.D.,
Medical Health Officer

---

WEST LUTHER.

*Medical Health Officer's Report.*

I have the honor to report that since my appointment to the position of Medical Health Officer no case of contagious disease has been reported to me. I have heard of only one case of typhoid fever in the township, and so far as I know the general health of our municipality has been exceptionally good.

WM. J. ROBINSON, MD.,
Medical Health Officer.

YARMOUTH.

*Secretary's Report.*

The Board met twice during the year, the appointment of a Sanitary Inspector having done away with the necessity of regular meetings as in former years. A few complaints were investigated and no epidemics reported. The sanitary condition of the township is good.

K. W. McKAY,
Secretary.

---

YORK.

*Secretary's Report.*

In submitting to you my annual report on the sanitary condition of the municipality and the health of the inhabitants thereof, it affords me much pleasure to be able to state that we have been free from any serious outbreak of contagious or epidemic diseases.

In the month of August last the Rev. J. Gammack reported several cases of diphtheria in the vicinity of Coleman's Corners, or Little York, but by the prompt action of the Board, through our Medical Health Officer and Inspector for that district, the cause of the outbreak was discovered and at once removed, thereby checking the spread of the malady, and since that time the Board is not cognizant of any cases of this dread disease existing within the municipality.

Several cases of typhoid fever were indirectly reported to the Board during the year, and some deaths have occurred from this disease and also from diphtheria. In this connection I wish to state that the attending physicians in such cases almost invariably fail to report as required by law, and as proof of this, during the year I received but one such notice.

By far the greatest nuisance we as a Board have had to deal with this year as well as for a number of years past is the deposits of night-soil, garbage, and all manner of refuse from the City of Toronto in our township.

Aside from the almost intolerable nuisance existing in the localities where night-soil especially is dumped, the reports of our Medical Health Officer from time to time and the testimony of medical practitioners in those localities have proven to the satisfaction of the Board that the depositing of such large quantities of night-soil and garbage (in the crude state) in the township is detrimental to the health of the inhabitants.

Acting upon this conclusion, and the number of complaints and protests being constantly received from residents of the township against the bringing into and depositing of night-soil in the township from the City of Toronto and adjoining municipalities, the Board passed a resolution in July last prohibiting any person or persons from bringing night-soil from any adjoining municipality into or depositing the same within the limits of the municipality without a permit from the Board, and cancelling all permits previously granted.

In defiance of this resolution (a copy of which was served on each of them) the city excavators continued on as before. War being thus declared, the Board instructed the inspectors to be vigilant and prosecute every person found depositing night-soil contrary to the resolution, and they were successful in securing a number of convictions. After some two months of hard fighting (in some cases almost hand to hand) between the inspectors and excavators hostilities ceased by the latter raising a flag of truce and appealing to the City Board of Health for relief.

The chairman of the City Board of Health was present at our next meeting, held on the 23rd of August, and urged that permits be granted the city excavators by our Board to allow them to deposit night-soil in our township during the summer months, or at least for a sufficient length of time to relieve the city of the accumulations, and allow the city authorities time to make other provisions for its disposal; also stating that should any of the excavators persist in violating our rules, he would advise that the city refuse the offender license in the future.

After due consideration the Board agreed to grant permits for two weeks only, and renewable on good behavior, to all excavators against whom no complaint was lodged or case pending.

Immediately on the granting of permits complaints again reached the Board, and at the following meeting a resolution was passed to the effect that from and after the 1st day of February, 1891, no night-soil shall be brought from any adjoining municipality into and deposited in the township of York.

The adjoining municipalities were duly notified of the passing of this resolution.

The city authorities, I am informed, purpose establishing a crematory for the disposal of night-soil and garbage. When this is an accomplished fact we hope (and it will be the duty of the Board to insist upon it) the city will cease using our township as a back yard in which to dump the contents of their privy pits, refuse, and disease-laden garbage.

I might state that in my opinion night-soil could be brought into the township and used by the gardener and farmer with profit and without being a nuisance to residents in the immediate vicinity where it is deposited were it properly treated; but this cannot possibly be done under the existing law without involving a great expense upon the municipality.

If the councils of local municipalities had power under the Municipal Act, or Local Boards of Health under the Public Health Act, to charge a license of say twenty to twenty-five dollars annually for each vehicle used for the purpose of bringing night-soil into the municipality from an adjoining municipality, or to compel the municipality from which the soil is brought to pay the cost of inspection or supervision of the article when brought into the township, then and only then can it be imported with any degree of satisfaction to the Board.

Without such a law the only remedy left is to prohibit the importation of the stuff, unless previously made into a dry and odorless fertilizer.

Our Inspectors are deserving of great praise for the fearless manner in which they performed their arduous duties, especially during the months of July and August, when they were almost constantly on duty.

In conclusion I would congratulate our Board on the absence of any epidemic, and on the general healthfulness of the inhabitants of our fair township.

W. A. CLARKE,
Secretary.

---

ZONE.

*Secretary's Report.*

There has been very little sickness, and none of a contagious nature, during the year in this municipality. The Sanitary Inspector states that he visited all the schools in the township and found them in a good sanitary condition. He made his visits in April and August. He reports very great improvement since his first inspection two years ago.

S. HARRIS,
Secretary.

# TABLE OF CONTENTS.

## PART I.


| | PAGE. |
|---|---|
| Introduction by the Chairman | i. |
| Report of the Secretary | iii. |
| Amendment to Public Health Act | iv. |
| The Economics of Public Health Work | vi. |
| The Health of Public Schools | xiii. |
| Sewage Disposal | xvi. |
| Nuisances arising from Slaughter-Houses and other Offensive Trades | xxv. |
| Public Water Supplies | xxxix. |
| Outbreaks of Contagious Diseases | l. |
| Diphtheria | lvii. |
| Actinomycosis | lxii. |
| Hydrophobia—Investigation of the Outbreak of Rabies at Dorchester | lxvi. |
| The Flour Moth Pest | lxix. |


## PART II.


| | |
|---|---|
| Chairman's Annual Address | lxxv. |
| Report on Sanitary Progress in Great Britain and on the Continent | lxxix. |
| Report of Committee of School Hygiene on Physical Culture in Provincial Normal, County Model, High, Public and Separate Schools of Ontario | lxxxix. |
| Report on the Proposed System of Sewerage at Brantford | xcvii. |
| Report on the Conder System of Treating Sewage at the Ontario Institute for the Deaf and Dumb, Belleville | xcviii. |
| Report of Secretary *re* Flooding of Land along South River | ci. |
| Report of the Committee on Sewerage and Water Supply on the Public Water Supply of Orillia | civ. |
| Report *re* Beaverton Mill-Dam Nuisance | cvii. |
| Report on the Outbreak of Diphtheria at Kingston Asylum | cvii. |


### A.


| | |
|---|---|
| Abattoirs, Berlin System in use for | xxxii. |
| Actinomycosis, Existence of | v. |
| Actinomycosis, Reports regarding | lxii-lxv. |


### B.


| | |
|---|---|
| Board of Health, Provincial, Presentation of Report of | i. |
| Barrie's Water Supply, Report on | xliv. |

C.

PAGE.
Cassidy, Dr. J. J., Report on Physical Culture in Provincial Normal, County Model, High, Public and Separate Schools of Ontario... lxxxix.
Chairman's Annual Address ... lxxv.
Cheese Factories and Dairies, Inspection of ... xxxvi.
Contagious Diseases, Outbreak of ... l.
Covernton, Dr. C. W., Report on Sanitary Progress in Great Britain and on the Continent ... lxxix.

D.

Dairy and Creamery Associations, Abstracts from Reports of ... xxxviii.
Diphtheria, Diagnosis of ... lvii-lxii.
Diphtheria, Report on the Outbreak of, at Kingston Asylum ... cvii.
Diseases, zymotic, Tables Regarding ... viii.

F.

Fertilizer Works, Report on, by Dr. P. H. Bryce ... xxxiv.
Flour Moth Pest—Measures to be taken in stamping it out ... lxxi.
Flour Moth Pest, Report of the Investigation of ... lxxii.

I.

Ingersoll's Water Supply, Report on ... xxxix.

K.

Kincardine's Water Supply, Report on ... xlii.

N.

North Toronto, Report *re* Public Water Supply for ... xlv.
Nuisances arising from Slaughtering-Houses, and other offensive trades ... xxv-xxxv.

O.

Orillia Water Works, Report on ... xliv.

P.

Public Health Act, Amendment to ... iv.
Public Health Work, The Economics of ... vi.
Public Schools, The Health of ... xiii-xvi.
Public Water Supplies ... xxxix.

R.

Rabies (Hydrophobia). Report of the Investigation of the Outbreak of Rabies at Dorchester ... lxvi.
Rabies, Rules for Treatment of ... lxix.
Report of the Secretary ... iii.
Report on Sanitary Progress in Great Britain and on the Continent ... lxxix.

PAGE.

Report of Committee of School Hygiene on Physical Culture in Provincial Normal, County Model, High, Public and Separate Schools in Ontario ..... lxxxix.
Report on the Proposed System of Sewerage at Brantford..... xcvii.
Report of Secretary *re* Flooding of Land along South River ..... ci.
Report on the Conder System of Treating Sewage at the Ontario Institute for the Deaf and Dumb, Belleville ..... xcviii.
Report of the Committee on Sewerage and Water Supply on the Public Water Supply of Orillia ..... civ.
Report on the Outbreak of Diphtheria at Kingston Asylum ..... cvii.

S.

Sewage Disposal..... xvi-xxv.
Sewerage at Brantford, Report on the Proposed System of..... xcvii.
Sewage at the Ontario Institute for the Deaf and Dumb, Belleville, Report on the Conder System of Treating ..... xcviii.
Slaughter-Houses, Nuisances arising from ..... xxv-xxxv.
Slaughter-Houses, By-law regarding in the County of London ..... xxxviii.
Smallpox, Deaths from, in Ontario ..... xii.
St. Thomas' Water Supply, Letters regarding..... xl.

T.

Tuberculosis—a Bulletin prepared regarding it..... lv.
Tuberculosis regarded as a Zymotic Disease..... lvi.

U.

Underground Waters as Sources of Public Supplies..... xlvii.

## ANNUAL REPORTS OF LOCAL BOARDS OF HEALTH.

### CITIES.

| | PAGE. | | PAGE. |
|---|---|---|---|
| Belleville | 3 | Ottawa | 15 |
| Brantford | 4 | Stratford | 16 |
| Guelph | 8 | St. Catharines | 20 |
| Hamilton | 10 | St. Thomas | 21 |
| Kingston | 12 | Toronto | 21 |
| London | 13 | | |

### TOWNS.

| | | | |
|---|---|---|---|
| Almonte | 24 | Galt | 30 |
| Amherstburg | 24 | Goderich | 31 |
| Brampton | 24 | Ingersoll | 31 |
| Barrie | 25 | Kincardine | 32 |
| Brockville | 26 | Meaford | 32 |
| Bowmanville | 27 | Mt. Forest | 32 |
| Collingwood | 27 | Napanee | 33 |
| Chatham | 28 | Niagara Falls | 33 |
| Cornwall | 28 | North Toronto | 33 |
| Cobourg | 29 | Owen Sound | 34 |
| Dundas | 30 | Orangeville | 34 |

| | PAGE. |
|---|---|
| Orillia | 35 |
| Picton | 36 |
| Peterboro' | 36 |
| Port Hope | 39 |
| Port Arthur | 39 |
| Petrolia | 40 |
| Paris | 40 |
| Pembroke | 41 |
| Strathroy | 42 |
| Sandwich | 43 |
| Seaforth | 43 |
| Simcoe | 43 |
| Trenton | 44 |
| Tilsonburg | 45 |
| Whitby | 45 |
| Wingham | 45 |
| Waterloo | 46 |
| Walkerton | 47 |
| West Toronto Junction | 48 |
| Windsor | 49 |
| Woodstock | 50 |


VILLAGES.


| | |
|---|---|
| Alliston | 52 |
| Arnprior | 52 |
| Alexandria | 52 |
| Ashburnam | 53 |
| Ailsa Craig | 55 |
| Arkona | 55 |
| Alvinston | 55 |
| Blenheim | 55 |
| Brussels | 56 |
| Belle River | 56 |
| Bolton | 57 |
| Bracebridge | 57 |
| Beaverton | 57 |
| Bolton | 58 |
| Blyth | 58 |
| Creemore | 58 |
| Cardinal | 58 |
| Chesley | 59 |
| Dunnville | 59 |
| Dresden | 59 |
| Dundalk | 60 |
| Embro | 60 |
| Exeter | 60 |
| Essex Centre | 61 |
| Forest | 61 |
| Glencoe | 62 |
| Grimsby | 62 |
| Hastings | 63 |
| Hagersville | 63 |
| Harriston | 63 |
| Lucan | 64 |
| Lanark | 64 |
| Leamington | 65 |
| Morrisburgh | 65 |
| Midland | 65 |
| Millbrook | 66 |
| Minden | 66 |
| Milverton | 66 |
| Markdale | 67 |
| Milton | 67 |
| Norwood | 67 |
| Norwich | 68 |
| Newburgh | 69 |
| Niagara Falls | 69 |
| Newcastle | 69 |
| Oil Springs | 69 |
| Ottawa East | 70 |
| Point Edward | 70 |
| Port Stanley | 71 |
| Port Rowan | 71 |
| Ridgetown | 71 |
| Southampton | 72 |
| Stouffville | 72 |
| Springfield | 72 |
| Stirling | 72 |
| Sidney | 73 |
| Streetsville | 73 |
| Thedford | 74 |
| Teeswater | 74 |
| Tottenham | 74 |
| Thamesville | 75 |
| Uxbridge | 75 |
| Vienna | 75 |
| Wardsville | 75 |
| Waterdown | 76 |
| Watford | 76 |
| Wallace | 77 |
| Weston | 77 |


TOWNSHIPS.

From page 78 to page 145,

# REPORT

Of the Secretary and Registrar of the Province of Ontario, for the year ending the 31st day of December, 1890.

Presented to the Legislative Assembly of Ontario.

By Command,

J. M. GIBSON,
*Secretary.*

Provincial Secretary's Office,
Toronto, 29th March, 1891.

# REPORT

OF THE

# SECRETARY AND REGISTRAR

OF THE

## PROVINCE OF ONTARIO

FOR THE YEAR ENDING THE 31ST DAY OF DECEMBER, 1890.

---

*To the Honourable* SIR ALEXANDER CAMPBELL,

*Knight Commander of the Order of St. Michael and St. George, Member of the Queen's Privy Council for Canada, etc., etc., etc., Lieutenant-Governor of the Province of Ontario.*

MAY IT PLEASE YOUR HONOUR:

The undersigned begs respectfully to present to Your Honour the report prepared with respect to the chief transactions of the Department of the Secretary and Registrar of the Province of Ontario, during the year ending the 31st day of December, 1890.

J. M. GIBSON,
*Secretary and Registrar of the Province of Ontario.*

PROVINCIAL SECRETARY'S OFFICE,
TORONTO, 29th March, 1891.

PROVINCIAL SECRETARY'S OFFICE,
TORONTO, 2nd April, 1891.

The Honourable JOHN MORISON GIBSON,
M.A., LL.B., Q.C., M.P.P.,
Secretary and Registrar of the Province of Ontario.

SIR,—In compliance with the practice now followed for some years, I have the honour to submit for your information, a general statement relative to the routine and other work done in this office during the year 1890.

I have, as for some years past, to report that there has been a steady increase in the duties of the department. This will be clear from a reference to Appendix I., hereto.

In addition to matters which arose in other years, and which required attention and entailed correspondence during 1890, there were under consideration 4,684 new subjects, being an increase of several hundreds over any previous year.

The following is a synopsis of the routine work of the office during the year :

(*a*) In 1890, there were received at this office alone, 11,502 despatches, letters and telegrams, and during the same period, 12,822 despatches, letters and telegrams were written and sent out.

(*b*) The references by this office to other Departments of subjects for consideration, numbered 3,159. The reports thereon, together with other papers referred here in like manner by other Departments, amounted in number to 3,317.

(*c*) Marriage Act forms to the number of 27,934 were distributed to issuers throughout the province, from whom the sum of $2,793 was received in fees.

(*d*) Warrants were issued for the purpose of removing to the various Asylums from the County Gaols, 307 persons duly certified to be insane and dangerous to be at large. Ninety-four Warrants were issued for the discharge of patients, whose recovery had been certified by the various Medical Superintendents, and 88 Warrants for the purpose of transferring certain patients from one Asylum to another.

(*e*) A large number of blank forms for the statutory returns required of Joint Stock Companies was distributed.

(*f*) The usual supplies of blank forms for the use of sheriffs for the examination of persons committed for removal to the Asylums were printed and sent out.

(*g*) Four hundred and eighty-nine appointments to office and one hundred and sixty-six public notices of various kinds were inserted in *The Ontario Gazette*.

During the year the following Proclamations by His Honour the Lieutenant-Governor, were issued and gazetted :—

I. To annex to the Township of Plummer and Plummer-Additional certain mining-locations and parts of mining-locations in the District of Algoma.

II. To dissolve the Legislative Assembly, and to call a new Legislative Assembly.

III. To bring into force "An Act respecting the Profession of Architects."

IV. To withdraw the Town of West Toronto Junction from the jurisdiction of of the County of York.

V. To add to the Town of Almonte certain portions of the adjoining Township of Ramsay.

VI. To federate Victoria University with the University of Toronto, and appointing the said federation to take effect on, from and after the 15th day of November, 1890.

VII. To erect the Village of Alliston into a town.

VIII. To bring into force "An Act respecting the Culling and Measurement of Saw-logs cut upon Crown lands," said Act to come into force on the 1st day of January, 1891.

IX. To offer a reward for the arrest and detention of one George Goodwin, for the murder of one Richard Longford, in the Township of Huntley, in the County of Carleton.

X. To annex to the Town of West Toronto Junction certain portions of the adjoining Township of York.

His Honour also issued his Warrant under the provisions of The Jurors' Act, summoning a special sitting of the Court of General Sessions of the Peace, for the purpose of selecting Jurors' Lists for the County of Norfolk.

Notice was also given for the purpose of bringing into force "An Act respecting the City of London," whereby a portion of the Township of Westminster became annexed to the said city.

During the year, one hundred and forty-four Letters Patent, including five wholly in manuscript, were engrossed and issued under the provisions of "The Ontario Joint Companies' Letters Patent Act," being an increase in number of twenty-one over the previous year.

The following is a list of the Charters granted, with the amounts of the capitals of the respective companies :—

| | |
|---|---|
| The Catholic Review Publishing Company of Toronto (Limited) | $10,0( 0 |
| The Casselman Lumber Company (Limited) | 250,000 |
| The Stirling Phosphate and Mining Company of Kingston (Limited) | 50,000 |
| The St. Thomas Car Wheel Company (Limited) | 250,000 |
| The Lindsay Skating and Athletic Association (Limited) | 10,000 |
| The Gravel Bay Mining Company of Ontario (Limited) | 100,000 |
| The Brooks' Manufacturing Company of Peterborough (Limited) | 250,( 00 |
| The City Planing Mill Company of Toronto (Limited) | 3,000 |
| The Snowdon Lumber Company of Ontario (Limited) | 50,000 |
| The Hamilton Electric Light Company (Limited) | 200,000 |
| The Mimico Real Estate Security Company (Limited) | 500,000 |
| The Walkerville Club House Company (Limited) | 5,000 |
| The Killey-Beckett Engine Company of Hamilton (Limited) | 40,000 |
| The Walkerville Malleable Iron Company (Limited) | 100,000 |
| The North Shore Navigation Company of Ontario (Limited) | 50,000 |
| The John Ryan Company of Toronto (Limited) | 40,000 |
| The Queen City Company of Ontario (Limited) | 50,000 |
| The Sault Ste. Marie North Shore Mining Company (Limited) | 200,000 |
| The Cowan Cocoa and Chocolate Company of Toronto (Limited) | 25,000 |
| The West Zorra Cheese and Butter Manufacturing Company (Limited) | 3,000 |
| *The Leamington Post* Printing Company (Limited) | 3,000 |
| The Alliance Bond and Investment Company of Ontario (Limited) | 1,000,000 |
| The Toronto Ferry Company (Limited) | 250,( 00 |
| The Lion's Head Lumber Company (Limited) | 30,000 |
| The Military Institute Company of Toronto (Limited) | 3,000 |
| The Kakabeka Falls Land and Electric Company (Limited) | 800,000 |
| The Alliance Manufacturing Company of Toronto (Limited) | 25,000 |
| The Toronto Apiary and Honey Company (Limited) | 3,000 |
| The Chown and Cunningham Company of Kingston (Limited) | 200,000 |
| The London Printing and Lithographing Company (Limited) | 40,000 |
| The C. Turnbull Company of Galt (Limited) | 50,000 |

| | |
|---|---|
| The Toronto Stock Yard and Abattoir Company (Limited) | $500,000 |
| The London Gun Club (Limited) | 1,000 |
| The North Brant Dairy Association (Limited) | 3,000 |
| The Brockville Wringer Company (Limited) | 50,000 |
| The Toronto College of Music (Limited) | 50,000 |
| The London Covered Rink Company (Limited) | 4,000 |
| The Chatham Novelty Company (Limited) | 8,000 |
| The Phœnix Club of Simcoe (Limited) | 2,000 |
| The Wilson Manufacturing Company of Hamilton (Limited) | 30,000 |
| The Lake of the Woods Gold and Silver Reduction Company (Limited) | 200,000 |
| The Rodwell Manufacturing Company of Toronto (Limited) | 50,000 |
| The Mail Job Printing Company (Limited) | 60,000 |
| The M. Langmuir Manufacturing Company of Toronto (Limited) | 100,000 |
| The York Soap Company (Limited) | 25,000 |
| The Walkerville Brewing Company (Limited) | 95,000 |
| The Toronto Belt Land Corporation (Limited) | 600,000 |
| The Austin Manufacturing Company of Toronto (Limited) | 50,000 |
| The Office Fyles Manufacturing Company of Toronto (Limited) | 49,000 |
| The Reliance Storage Battery Company of Ontario (Limited) | 100,000 |
| The Credit Valley Quarries Company (Limited) | 25,000 |
| The Humberstone Cheese Factory Company (Limited) | 3,000 |
| The Port Talbot Cheese and Butter Company (Limited) | 3,000 |
| The Gurd Meter Company of London (Limited) | 45,000 |
| The Sun Lithographing Company of Ontario (Limited) | 80,000 |
| The Otterville Manufacturing Company (Limited) | 3,000 |
| The Ouillette Avenue Street Railway Company of Windsor (Limited) | 10,000 |
| The Progressive Publishing Company of Toronto (Limited) | 50,000 |
| The Wentworth Gas and Oil Company (Limited) | 45,000 |
| The Muskoka Leather Company (Limited) | 50,000 |
| The Algoma Gold Mining and Reduction Company (Limited) | 500,000 |
| The Windsor and Walkerville Land Company (Limited) | 100,000 |
| The Fairbank Consolidated Mining Company (Limited) | 500,000 |
| The Toronto Cider and Fruit Vinegar Company (Limited) | 25,000 |
| *The World* Newspaper Company of Toronto (Limited) | 25,000 |
| The Ontario Propeller Manufacturing Company (Limited) | 3,000 |
| The Toronto City Passenger Railway Company (Limited) | 5,000,000 |
| The Railway and Steamship Publishing Company of Toronto (Limited) | 10,000 |
| The Attorney and Agency Company of Ontario (Limited) | 50,000 |
| The Coulthard-Scott Company of Oshawa (Limited) | 40,000 |
| The Drumbo Chemical Light Company (Limited) | 20,000 |
| The Ottawa Brick Manufacturing Company (Limited) | 45,000 |
| The Hagersville Milling Company (Limited) | 40,000 |
| The Silver Centre Mining Company of Ontario (Limited) | 300,000 |
| The Delineator Publishing Company of Toronto (Limited) | 25,000 |
| The Donald Produce Company of Norwich (Limited) | 25,000 |
| The Humberstone Summer Resort Company of Ontario (Limited) | 20,000 |
| The Glassford Organ and Piano Company of Chatham (Limited) | 20,000 |
| The Hemlock City Gristing and Milling Company (Limited) | 10,000 |
| The St. Thomas Pipe and Foundry Company (Limited) | 50,000 |
| The Whitefish River Improvement Company (Limited) | 15,000 |
| The Citizens' Street Railway Company of Toronto (Limited) | 1,000,000 |
| The Bain Brothers Manufacturing Company (Limited) | 50,000 |
| The Electro-Mercurial Amalgamator and Mining Company of Ontario (Limited) | 100,000 |
| The Gold and Silver Trading Company of Toronto (Limited) | 100,000 |
| The Ontario Oriental Flour Company (Limited) | 25,000 |
| The Breithaupt Leather Company (Limited) | 500,000 |

| | |
|---|---|
| The Berlin Piano Company (Limited) | $100,000 |
| The Hanover Spring Bed and Upholstering Company (Limited) | 25,000 |
| The Johnston Patent Ploughshare Company of Toronto (Limited) | 100,000 |
| The Windsor Building and Land Company (Limited) | 100,000 |
| The Vermilyea Corset Company of Ontario (Limited) | 40,000 |
| The Orangeville Electric Lighting and Power Company (Limited) | 20,000 |
| The Nottawasaga Farmers' Milling and Power Company (Limited) | 10,000 |
| The Kaladar Mining Company (Limited) | 120,000 |
| The Harvard Chair Company of Toronto (Limited) | 3,000 |
| The Streetsville Woollen Manufacturing Company (Limited) | 200,000 |
| The Toronto Rolling Mill and Forging Company (Limited) | 200,000 |
| The Haliburton Mining Company (Limited) | 100,000 |
| The Sarnia Maizea and Milling Company (Limited) | 25,000 |
| The Ontario Telephone Company (Limited) | 50,000 |
| The Toronto Veterinary Dental School (Limited) | 3,000 |
| The Kerr Engine Company (Limited) | 100,000 |
| Hendrie and Company (Limited) | 300,000 |
| The Niagara and Queenston Land and Electric Company (Limited) | 900,000 |
| Hiram Walker and Sons (Limited) | 5,000,000 |
| The Snider Lumber Company of Waterloo (Limited) | 40,000 |
| The Toronto Propeller Manufacturing Company (Limited) | 3,000 |
| The Walkerville Land and Building Company (Limited) | 1,000,000 |
| The Victoria Curling Rink Company of Hamilton (Limited) | 20,000 |
| The Ontario Glue and Fertilizer Company (Limited) | 25,000 |
| The Brosius Motor Sewing Machine Company of Hamilton (Limited) | 300,000 |
| The Widdifield Electric Brake Company of Toronto (Limited) | 300,000 |
| The Kingsville Natural Gas and Oil Company (Limited) | 43,740 |
| The Maxville Public Hall Company (Limited) | 4,000 |
| The Kingston Real Estate Company (Limited) | 100,000 |
| The Metropolitan Publishing Company of Toronto (Limited) | 25,000 |
| The Osprey Farmers' Milling Company (Limited) | 8,000 |
| The Interior Wood Decorating Company of Toronto (Limited) | 25,000 |
| The Welland Natural Gas Company (Limited) | 2.000 |
| The Vankleek Hill Electric Light Company (Limited) | 3,000 |
| The Weston, High Park and Toronto Street Railway Company (Limited) | 100,000 |
| The Temperance League Coffee House Company of Ontario (Limited) | 90.000 |
| The Galt and Preston Street Railway Company (Limited) | 50,000 |
| The Toronto and Mimico Electric Railway and Light Company (Limited) | 100,000 |
| The St. George's Hall Company of Toronto (Limited) | 25,000 |
| The Globe Tobacco Works Company of London (Limited) | 50,000 |
| The Standard Asbestos Company of Ontario (Limited) | 100,000 |
| The Peterborough Light and Power Company (Limited) | 200,000 |
| The Norland Milling Company (Limited) | 5,000 |
| The Rideau Lake Cottage Company (Limited) | 25,000 |
| The Preston Spa Health and Pleasure Resort Company (Limited) | 50,000 |
| The Toronto Lock Manufacturing Company (Limited) | 50,000 |
| The Steel Sink, Range, Boiler and Stamping Company of Ontario (Limited) | 50,000 |
| The Toronto Telephone Company (Limited) | 250,000 |
| The London and Spring Bank Pleasure Resort Company (Limited) | 12,000 |
| The Wilson Publishing Company of Toronto (Limited) | 200,000 |
| The Essex Brass and Iron Company of London, Ontario (Limited) | 30,000 |
| The Essex Moulding Sand Company (Limited) | 25,000 |
| The Cant Brothers Company of Galt (Limited) | 40,000 |
| The John Doty Engine Company of Toronto (Limited) | 250,000 |
| The Ideal Washer, Churn and Wire Mattress Company of St. Thomas (Limited) | 20,000 |
| The Niagara Falls Electric Light and Power Company (Limited) | 20,000 |
| | $26,515,740 |

Under the same Act, Letters Patent were granted for the purpose of authorizing the Foxton Phosphate Mining Company (Limited), and the Lake Superior Mining Company (Limited), two Imperial companies, to carry on within Ontario certain of their corporate powers. For the same purpose, a license was also issued, under the Statute in that behalf, to The Imperial Trust Company (Limited), a Canadian company.

The following Supplementary Letters Patent were also issued under the Ontario Joint Stock Companies' Letters Patent Act :—

To The Credit Valley Quarries Company (Limited) increasing its capital stock from the sum of $25,000 to the sum of $35,000.

To The Hamilton Bycicle Track and Athletic Company (Limited), increasing its capital from the sum of $6,000 to the sum of $12,000.

To The Rideau Skating and Curling Company (Limited), increasing its capital from the sum of $10,000 to the sum of $15,000.

To The Ammonia Company of Toronto (Limited), increasing its capital from the sum of $40,000 to the sum of $50,000.

To The Barnum Wire and Iron Works Company of Ontario (Limited), increasing its capital from the sum of $45,000 to the sum of $100,000.

To The Brigden Fair Trading Mill and Elevator Company (Limited), increasing its capital from the sum of $3,000 to the sum of $15,000.

To The Paramount Cheese and Butter Manufacturing Company (Limited), increasing its capital from the sum of $3,000 to the sum of $5,000.

To The G. & J. Brown Manufacturing Company (Limited), of Belleville, Ontario, increasing its capital from the sum of $14,000 to the sum of $50,000.

To The Hamilton Electric Light Company (Limited), increasing its capital from the sum of $200,000 to the sum of $300,000.

To The Sunnyside Boating Company of Toronto (Limited), increasing its capital from the sum of $5,000 to the sum of $10,000.

To The Hamilton Bridge and Tool Company, increasing its capital from the sum of $70,000 to the sum of $100,000.

To The Constructing and Paving Company of Ontario, (Limited), increasing its capital from the sum of $20,000 to the sum of $100,000.

To extend the powers of The Imperial Produce Company of Toronto (Limited).

To sub-divide the shares of The Central Press Agency of Toronto.

The nominal capital of the Companies incorporated amounted to the unprecedentedly large sum of $26,515,740. When to this is added the amounts by which the capitals of certain Companies were increased by Supplementary Letters Patent, the total capital stock amounts for the year to $26,866,740.

In addition to the Supplementary Letters issued, the following Orders-in-Council were passed and gazetted :—

Changing the name of "The Ontario Produce Company (Limited)" to that of "The Imperial Produce Company of Toronto (Limited)."

Changing the name of "The Osborne-Killey Manufacturing Company of Hamilton (Limited)" to that of "The Osborne-Worswick Company of Hamilton, (Limited)."

Changing the name of "The Uxbridge Cabinet and Organ Manufacturing Company" to that of "The Uxbridge Piano and Organ Manufacturing Company (Limited)."

Changing the name of "The Hamilton Bridge and Tool Company" to that of "The Hamilton Bridge Company (Limited)."

Five notices in the *Gazette* respecting the incorporation of Companies under The General Gas and Water Act, were given as follows:—

The Lindsay Water Works Company.

The Stratford Natural Gas Company (Limited).

The Barrie Water Works Company.

The Simcoe Gas and Water Company.

The Lake of the Woods Water Works Company.

The fees, for all purposes, received by the office during the year, amounted to $11,075,45, being an increase over the previous year of $2,274.18.

Appended to this report will be found various Tables and Appendices.

All of which is respectfully submitted.

G. E. LUMSDEN,
*Assistant Secretary.*

APPENDIX I.—Comparative Statement showing the work done in Provincial Secretary's Office during the years 1868, 1871, 1875, 1877, 1881, 1883, 1886, 1877, 1888, 1889, and 1890.

| WORK DONE. | 1868. | 1871. | 1875. | 1877. | 1881. | 1883. | 1886. | 1887. | 1888. | 1889. | 1890. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Number of fyles, as shown by the office register | 1,172 | 1,264 | 1,862 | 1,983 | 2,408 | 3,336 | 3,575 | 3,967 | 4,275 | 4,434 | 4,684 |
| Letters received | 2,107 | 1,690 | 3,289 | 3,162 | 4,162 | 5,586 | 6,097 | 9,613 | 10,626 | 11,027 | 11,502 |
| Letters sent | 1,667 | 1,280 | 3,326 | 3,358 | 3,756 | 4,646 | 5,734 | 9,227 | 13,458 | 12,887 | 12,822 |
| References to other departments | 482 | 912 | 1,642 | 1,528 | 1,790 | 1,885 | 2,899 | 2,369 | 2,948 | 2,743 | 3,159 |
| Reports from other departments | 256 | 470 | 966 | 1,232 | 1,395 | 1,275 | 2,689 | 1,786 | 2,760 | 2,909 | 3,317 |
| Letters Patent, issued under the Joint Stock Companies' Act | 19 | 24 | 57 | 38 | 119 | 114 | 90 | 88 | 117 | 123 | 144 |
| Supplementary Letters Patent | ..... | ..... | ..... | ..... | ..... | 10 | 14 | 10 | 19 | 8 | 13 |
| Circulars | 240 | 60 | 1,429 | 891 | 954 | 500 | 200 | 250 | 600 | 100 | 200 |
| Declarations fyled | 33 | 30 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Warrants *re* lunatics | 34 | 195 | 160 | 256 | 359 | 310 | 394 | 360 | 430 | 360 | 382 |
| Notarial certificates | 48 | 72 | 37 | 131 | 76 | 115 | 93 | 122 | 110 | 107 | 127 |
| Statutory returns | 52 | 58 | 135 | 792 | 2,500 | 3,200 | 1,000 | 1,200 | 1,500 | 2,000 | 2,500 |
| Marriage Act forms, etc., issued | ..... | ..... | 28,422 | 25,384 | 27,882 | 29,920 | 26,254 | 29,378 | 29,911 | 29,712 | 27,934 |
| Printed forms distributed to sheriffs | ..... | ..... | ..... | ..... | 1,800 | 1,700 | 2,000 | 3,000 | 3,500 | 4,000 | 4,200 |
| Other printed forms for municipal and other returns | ..... | ..... | ..... | ..... | 3,500 | 3,600 | 3,350 | 3,200 | 2,700 | 3,000 | 200 |
| Commissions under Great and Privy Seals | 135 | 190 | 139 | 170 | 275 | 318 | 227 | 214 | 534 | 359 | 400 |
| Fees received | $1,938 | $2,282 | $5,688 | $5,253 | $7,021 | $8,199 | $6,947 | $7,711 | $9,190 | $8,801 | $11,075 |
| *Ontario Gazette:* | | | | | | | | | | | |
| Proclamations published | ..... | 16 | 21 | 33 | 17 | 4 | 13 | 4 | 13 | 19 | 11 |
| Appointments gazetted | 110 | 149 | 94 | 460 | 525 | 461 | 535 | 613 | 541 | 518 | 489 |
| Public notices | 47 | 58 | 80 | 36 | 127 | 123 | 119 | 121 | 150 | 141 | 166 |

Appendix II.—A Detailed Statement of

| | | January. | | February. | | March. | | April. | | May. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Number. | Amount. | Number. | Amount. | Number. | Amount. | Number. | Amount. | Number. | Amount. |
| | | | $ c. | | $ c. | | $ c. | | $ c. | | $ c. |
| Commissions—Coroners | $13 00 | 1 | 13 00 | 1 | 13 00 | 4 | 52 00 | .... | ..... | 3 | 39 00 |
| do Notaries Public | 8 00 | 8 | 64 00 | 12 | 96 00 | 13 | 104 00 | 6 | 48 00 | 7 | 56 00 |
| Other commissions under Great Seal | 13 00 | 1 | 13 00 | .... | ..... | 1 | 13 00 | 2 | 26 00 | 1 | 13 00 |
| Other Commissions under Privy Seal. | | | | | | | | | | | |
| Declarations | 5 00 | .... | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... |
| Ferry licenses | | .... | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... |
| Superior Court certificates | 4 00 | 1 | 4 00 | 1 | 4 00 | 1 | 4 00 | 1 | 4 00 | .... | ..... |
| Division Court do | 2 00 | .... | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... |
| County do do | 2 50 | .... | ..... | .... | ..... | 1 | 2 50 | .... | ..... | .... | ..... |
| Surrogate do do | 2 00 | 3 | 6 00 | 1 | 2 00 | .... | ..... | 1 | 2 00 | 1 | 2 00 |
| Judicial Notary certificates | 1 00 | 13 | 13 00 | 10 | 10 00 | 15 | 15 00 | 6 | 6 00 | 18 | 18 00 |
| Companies—By-laws | | .... | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... |
| License to companies | | .... | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... |
| Change of name | 12 00 | 1 | 12 00 | .... | ..... | .... | ..... | .... | ..... | .... | ..... |
| Charters of incorporations | 10 00 | 1 | 10 00 | 1 | 10 00 | 3 | 30 00 | 3 | 30 00 | 2 | 20 00 |
| do do | 20 00 | .... | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... |
| do do | 25 00 | .... | ..... | 1 | 25 00 | .... | ..... | .... | ..... | .... | ..... |
| do do | 30 00 | 3 | 90 00 | 4 | 120 00 | 4 | 120 00 | 6 | 180 00 | 8 | 240 00 |
| do do | 40 00 | 2 | 80 00 | 2 | 80 00 | 1 | 40 00 | 5 | 200 00 | 2 | 80 00 |
| do do | 50 00 | 1 | 50 00 | 1 | 50 00 | 1 | 50 00 | 3 | 150 00 | 2 | 100 00 |
| do do | 60 00 | 6 | 360 00 | 3 | 180 00 | 2 | 120 00 | 1 | 60 00 | .... | ..... |
| Orders in Council | 12 00 | .... | ..... | .... | ..... | .... | ..... | 1 | 12 00 | .... | ..... |
| Marriage licenses | | .... | 211 50 | .... | 181 00 | .... | 182 70 | .... | 230 00 | .... | 223 20 |
| Supplementary. | | | | | | | | | | | |
| Queen's counsels | 13 00 | 34 | 442 00 | 3 | 39 00 | 2 | 26 00 | 2 | 26 00 | 1 | 13 00 |
| Searches | | .... | 60 | .... | 70 | .... | 2 35 | .... | 2 00 | .... | 2 10 |
| Gazette notices | 5 00 | 1 | 5 00 | .... | ..... | .... | ..... | .... | ..... | .... | ..... |
| Passports | 1 00 | .... | ..... | .... | ..... | 2 | 2 00 | .... | ..... | 1 | 1 00 |
| Waterworks certificates | 5 00 | .... | ..... | 1 | 5 00 | .... | ..... | .... | ..... | .... | ..... |
| Gas companies | 5 00 | .... | ..... | .... | ..... | .... | 5 00 | .... | ..... | .... | ..... |
| Grants—land | 20 00 | .... | ..... | .... | ..... | .... | ..... | 1 | 20 00 | .... | ..... |
| Copies | | .... | ..... | .... | 1 00 | .... | ..... | .... | ..... | .... | ..... |
| | | .... | 1,374 10 | .... | 810 70 | .... | 768 55 | .... | 996 00 | .... | 807 30 |
| Refunds—August— | | | | | | | | | | | |
| Templeton | $5 00 | | | | | | | | | | |
| Junkins | 30 | .... | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... |
| | 5 30 | | | | | | | | | | |
| | | 76 | 1,374 10 | 42 | 810 70 | 50 | 768 55 | 38 | 996 00 | 46 | 807 30 |

Fees received for services rendered therefor.

| June. | | July. | | August. | | September. | | October. | | November. | | December. | | Total number. | Total amount. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number. | Amount. | Number. | Amount. | Number. | Amount. | Number. | Amount. | Number. | Amount. | Number. | Amount. | Number. | Amount. | | |
| | $ c. | | $ c. | | $ c. | | $ c. | | $ c. | | $ c. | | $ c. | | $ c. |
| 2 | 26 00 | .. | ..... | 3 | 39 00 | .... | ..... | .... | ..... | .... | ..... | .... | ..... | 14 | 182 00 |
| 5 | 40 00 | 7 | 56 00 | 4 | 32 00 | 8 | 64 00 | 6 | 48 00 | 8 | 64 00 | 7 | 56 00 | 92 | 728 00 |
| 1 | 13 00 | 4 | 52 00 | .. | .... ... | 6 | 78 00 | 5 | 65 00 | 4 | 52 00 | 3 | 39 00 | 28 | 364 00 |
| .. | ..... | .. | ..... | .. | ..... | .... | ..... | 1 | 5 00 | .... | ..... | .... | ..... | 1 | 5 00 |
| .. | ..... | .. | ..... | .. | ..... | .... | ..... | 1 | 15 00 | .... | ..... | .... | ..... | 1 | 15 00 |
| .. | ... .. | .. | ..... | .. | ..... | 4 | 16 00 | 3 | 12 00 | .... | ..... | .... | ..... | 11 | 44 00 |
| .. | ..... | 1 | 2 00 | .. | ..... | 1 | 2 00 | .... | ..... | .... | ..... | .... | ..... | 2 | 4 00 |
| .. | ..... | 1 | 2 50 | .. | ..... | 1 | 2 50 | .... | ..... | .... | ..... | .... | ..... | 3 | 7 50 |
| 1 | 2 00 | 1 | 2 00 | 1 | 2 00 | 1 | 2 00 | 1 | 2 00 | .... | ..... | 1 | 2 00 | 12 | 24 00 |
| 17 | 17 00 | 8 | 8 00 | 5 | 5 00 | 9 | 9 00 | 8 | 8 00 | 10 | 10 00 | 8 | 8 00 | 127 | 127 00 |
| .. | ..... | .. | ..... | .. | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... |
| .. | ..... | .. | ..... | .. | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... |
| .. | ..... | .. | ..... | .. | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... | 1 | 12 00 |
| 2 | 20 00 | 1 | 25 00 | pt | 15 00 | 1 | 10 00 | 5 | 50 00 | 1 | 10 00 | 1 | 10 00 | 21 | 240 00 |
| .. | ..... | .. | ..... | .. | ..... .. | .... | ..... .. | 1 | 20 00 | 1 | 20 00 | .... | ..... | 2 | 40 00 |
| .. | ..... | .. | ..... | .. | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... | 1 | 25 00 |
| 11 | 330 00 | 5 | 150 00 | 4 | 120 00 | 3 | 90 00 | 8 | 2 40 | 3 | 90 00 | 7 | 210 00 | 66 | 1,980 00 |
| 1 | 40 00 | 3 | 120 00 | 1 | 40 00 | 3 | 120 00 | .... | ..... | 3 | 120 00 | 1 | 40 00 | 24 | 960 00 |
| 1 | 50 00 | 2 | 100 00 | 2 | 100 00 | 5 | 250 00 | 1 | 50 00 | 3 | 150 00 | .... | ..... | 22 | 1,100 00 |
| 4 | 240 00 | 1 | 60 00 | 1 | 60 00 | 2 | 120 00 | 3 | 180 00 | 2 | 120 00 | 4 | 240 00 | 29 | 1,740 00 |
| 1 | 12 00 | 1 | 12 00 | .. | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... | 3 | 36 00 |
| .. | 227 00 | .. | 275 00 | .. | 168 30 | .... | 280 00 | .... | 240 00 | .... | 330 00 | ... | 250 00 | .... | 2,798 70 |
| .. | ..... | 1 | 13 00 | .. | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... | 43 | 559 00 |
| .. | 1 75 | .. | 1 40 | .. | 1 85 | .... | 2 25 | .... | 1 70 | .... | 3 20 | .... | 2 65 | .... | 22 55 |
| .. | ..... | .. | ..... | .. | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... | 1 | 5 00 |
| 2 | 2 00 | .. | ..... | .. | ..... | .... | ..... | .... | ..... | .... | ..... | 1 | 1 00 | 6 | 6 00 |
| 1 | 5 00 | .. | ..... | .. | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... | 2 | 10 00 |
| .. | ..... | .. | ..... | .. | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... | ... | 5 00 |
| .. | ..... | .. | ..... | .. | ..... | .... | ..... | .... | ..... | .... | ..... | 1 | 20 00 | 2 | 40 00 |
| .. | ..... | .. | ..... | .. | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... | 1 | 1 00 |
| .. | 1,025 75 | .. | 878 90 | .. | 583 15 | .... | 1,045 75 | .... | 936 70 | .... | 969 20 | .... | 878 65 | 515 | 11,080 75 |
| .. | ..... | .. | ..... | .. | 5 30 | .... | ..... | .... | ..... | .... | ..... | .... | ..... | .... | 5 30 |
| 50 | 1,025 75 | 36 | 878 90 | 21 | 577 85 | 44 | 1,045 75 | 43 | 936 70 | 35 | 969 20 | 34 | 878 65 | 515 | 11,075 45 |

APPENDIX III.—Synopsis of Returns to Addresses and Orders of the House presented to the Legislative Assembly during the Session of 1890.

| No. | Sessional Papers. | Subject. | Mover. |
|---|---|---|---|
| | No. | | |
| 1 | 1 | Publishers of Public School text books, books published, and prices thereof | Mr. Preston. |
| 2 | 2 | Public Schools in which any language other than English is used in teaching; text books not printed in English; number of scholars attending said schools; number of scholars using books not printed in English; number of teachers who cannot use the English language | Mr. Craig. |
| 3 | 26 | Documents filed under the custody of Title Deeds Act up to January 1st, 1889, etc. | Mr. Wood. |
| 4 | 27 | Township municipalities in which the Act to impose a tax on dogs and for the protection of sheep is in force; number of sheep killed, etc | Mr. Dryden. |
| 5 | 33 | Number of Public School teachers who accepted the terms in regard to the superannuation fund and have withdrawn one half of amount paid in; number who have not accepted terms | Mr. Blythe. |
| 6 | 37 | Amount paid out of municipal funds in 1887 and 1888 for the relief of the poor exclusive of Houses of Industry; number of indigents relieved | Mr. Clarke. |
| 7 | 38 | Municipalities which have passed by-laws under the Ontario Shop Regulation Act regulating the hours of closing | Mr. Morgan. |
| 8 | 43 | The case submitted to the High Court of Justice as to certain provisions of the Public School Act relating to Separate School supporters | Mr. Meredith. |
| 9 | 45 | Appointment of W. H. Spencer, Police Magistrate for parts of Muskoka and Parry Sound, etc | Mr. Marter. |
| 10 | 46 | Amount of disbursements connected with Registrar of Deeds' office in city of Toronto for 1889 | Mr. H. E. Clarke. |
| 11 | 52 | The number of School Boards in cities, towns and villages which have adopted the ballot at school elections, etc | Mr. Clarke. |
| 12 | 54 | Amount paid out by the Crown on behalf of the Mercer Estate *re* lots on Sydenham road | Mr. Blythe. |
| 13 | 55 | Debentures issued on credit of Toronto University Permanent Fund | Mr. Balfour. |
| 14 | 56 | Erection of Biological Building in connection with Toronto University | Mr. Balfour. |
| 15 | 57 | Total attendance of students in University College from 1880 to 1890; number of graduates who lived in residence during these years; receipts and expenditures for 1888, 1889, 1890 | Mr. Wood. |
| 16 | 60 | Amount expended in Killarney for Colonisation Roads in 1883 | Mr. Monk. |
| 17 | 61 | Respecting the claim of John Eden, of Aylmer, for digging well by direction of Coroner McLay *re* death of Gilford Williams | Mr. Meredith. |
| 18 | 64 | Respecting free grants of land under sec. 13 of the Public Lands Act, since 1st July, 1857 | Mr. Creighton. |
| 19 | 67 | Counties in which the Temperance Act of 1878 was in force on 1st May, 1885, and the action of County Councils respecting salaried police magistrates | Mr. McLaughlin. |

APPENDIX III.—Synopsis of Returns to Addresses and Orders, etc.—*Continued.*

| No. | Sessional Papers. | Subject. | Mover. |
|---|---|---|---|
| | No. | | |
| 20 | 68 | Cases in which fines imposed by any Court have been remitted, or proceedings stayed by the Executive Government..... | Mr. French. |
| 21 | 70 | Dates of meeting and prorogation of the Legislative Assembly, from 1884-1889..... | Mr. Clancy. |
| 22 | 71 | Correspondence between Ontario and Dominion Governments relating to Dundas and Waterloo macadamized road..... | Mr. McMahon. |
| 23 | 73 | Judgment of Honourable Mr. Justice Robertson, in John Goswell *vs.* Isaac Swarthout and others; and correspondence, etc., relating to the case..... | Mr. Meredith. |
| 24 | 74 | Respecting applications for payments of dues on pine trees, under 43 Vic. cap. 4, sec. 4..... | Mr. Marter. |
| 25 | 75 | Memorials, etc., to the Lieutenant-Governor in Council, for or against the maintenance of a residence at Toronto University..... | Mr. Balfour. |
| 26 | 79 | Petition from corporation of Cayuga relating to the Grand River Navigation Company..... | Mr. Harcourt. |
| 27 | 83 | Provincial revenue and expenditure from Confederation until 1889..... | Mr. Clarke. |
| 28 | 85 | Amount to be paid on railway aid certificates; amounts of annuity certificates issued, and estimated present value of railway aid and annuity certificates..... | Mr. Balfour. |
| 29 | 86 | Tavern licenses in Killarney in 1888 and 1889..... | Mr. Meacham. |

PROVINCIAL REGISTRAR'S OFFICE, ONTARIO,
TORONTO, 29th April, 1891.

SIR,—I have the honour to submit for your information a statement of the work done in the Registrar's Branch of the Provincial Secretary's Department, from 1st January, 1890 to 31st December, 1890.

I have the honour to be,
Sir,
Your obedient servant,

JOHN F. C. USSHER,
*Deputy Registrar.*

HON. J. M. GIBSON,
Provincial Registrar.

---

CONDENSED STATEMENT shewing the work done in the Provincial Registrar's Office of the Department of the Provincial Secretary for the year 1890.

| DOCUMENTS. | Recorded. | Indexed. |
|---|---|---|
| Commissions under Great Seal | 270 | 270 |
| Commissions under Privy Seal | 121 | 121 |
| Special commissions | 9 | 9 |
| Letters Patent Incorporations | 139 | 139 |
| Supplementary do | 18 | 18 |
| Bonds and covenants | 31 | 31 |
| Warrants removing lunatics | 395 | 395 |
| Warrants discharging lunatics | 94 | 94 |
| Crown Land patents | 872 | 872 |
| Special deeds | 11 | 11 |
| Certificates, provincial land surveyors | 9 | 9 |
| Election writs | 98 | 98 |

In addition to the foregoing an annual return of all bonds and securities recorded in this Department is prepared for the Legislative Assembly and a Quarterly Return of all the lands is also sent to the Registrars of each County and District in which patents have issued, giving description of land patented, name of patentee, date, etc.; also notices of cancellations and surrenders of patents.

JOHN F. C. USSHER,
*Deputy Registrar.*

(No. 54).

Return to an Order of the House of the thirteenth day of April, 1891, for a copy of the Proclamation of the Returning Officer for the Electoral District of Parry Sound, appointed to hold the last election of a member to represent the said Electoral District in this House, for holding the election and fixing the places at which polls were to be opened for taking the votes of the Electors thereat. A list of the places, if any, not named in the said Proclamation at which polls were opened. A statement of the number of votes cast at any polling place not mentioned in the said Proclamation, shewing the number of votes cast for each candidate. Copies of the notices, if any, of the opening and holding of such last mentioned polls, published by the Returning Officer, and a statement of the date and manner of the publication thereof. Presented to the Legislature 29th April, 1891. Mr. *Marter*. (*Not Printed*).

(No. 55).

Return to an Address to His Honour the Lieutenant-Governor of the seventeenth day of April, 1891, praying that he will cause to be laid before this House a Return shewing what proceedings have been taken by the Government in investigating the business carried on by the Lion Provident and Life Association, with copies of any reports or Orders in Council connected therewith. Presented to the Legislature 30th April, 1891. Mr. *Bishop*. (*Not Printed*).

(No. 56).

Return to an Order of the House of the twenty-sixth day of February, 1890, for copies of the lease granted to the Keewatin Lumber Company or John R. Mather, of certain lands and islands in or near the Lake of the Woods, in the District of Algoma, and of all other leases granted of lands or islands in the said district prior to the year 1878. Also, shewing the revenue, if any, derived from the lands or islands so leased, or the timber cut therefrom in each year since such leases were made, shewing from whom received and on what account, in so far as the same are shewn in Department of Crown Lands. Also, a copy of the Judgment pronounced in the High Court of Justice as to the rights of the said lessees under the said leases. Also, shewing the area of lands so placed under lease. Also, a list of all claims made for locations or mining rights in the territory covered by the said leases, and of the decisions of the Commissioner of Crown Lands thereon. And copies of all correspondence with reference to the surrender by the lessees, or any of them, of the rights claimed under such leases, or any of such rights. Presented to the Legislature 1st May, 1891. Mr. *Meredith.* (*Not Printed*).

# STATEMENT

Of the Returns forwarded to the office of the Provincial Secretary of all the Fees and Emoluments received by the Registrars of Ontario for the year 1890, made in accordance with the provisions of the Revised Statutes of Ontario, 1887, Chapter 114, Section 100, with which is contrasted receipts of the same nature in the years 1888 and 1889.

Presented to the Legislative Assembly,

By Command,

J. M. GIBSON,
*Provincial Secretary*

Provincial Secretary's Office,
Toronto, April 27th, 1891.

STATEMENT of the Returns forwarded to the office of the Provincial Secretary of 1890, made in accordance with the provisions of the Revised Statutes of same nature in the years 1888 and 1889.

| OFFICE. | REGISTRAR. | Number of municipalities in the district. | Number of instruments registered during the year 1889. | Number of instruments registered during the year 1890. |
|---|---|---|---|---|
| Algoma | Thos. A. P. Towers—six months<br>R. A. Lyons—six months | 14 | 1,472 | 763 |
| Brant | Thos. S. Shenston | 7 | 2,309 | 2,314 |
| Bruce | Donald Sinclair | 27 | 4,440 | 4,035 |
| Carleton | P. J. Coffee | 12 | 1,996 | 2,233 |
| Dufferin | William McKim | 8 | 1,475 | 1,898 |
| Dundas | Simon S. Cook | 7 | 1,163 | 1,126 |
| Durham, E. R | George C. Ward | 5 | 787 | 713 |
| Durham, W. R | Robert Armour | 5 | 696 | 728 |
| Elgin | James H. Coyne | 12 | 3,257 | 3,143 |
| Essex | James Wallace Askin | 21 | 6,160 | 4,714 |
| Frontenac | Kenneth McIver (Deputy) | 18 | 1,364 | 1,262 |
| Glengarry | Angus McDonald | 6 | 1,158 | 1,035 |
| Grenville | Patrick McCrae | 9 | 1,239 | 1,201 |
| Grey, N. R | Robert McKnight | 12 | 3,009 | 2,791 |
| Grey, S. R | Thomas Lauder | 8 | 1,862 | 1,682 |
| Haldimand | William Parker | 13 | 1,423 | 1,280 |
| Haliburton | E. C. Young | 23 | ..... | 196 |
| Halton | Donald Campbell | 9 | 1,329 | 1,451 |
| Hastings | Addison Vanderwort | 28 | 2,886 | 2,830 |
| Huron | James Dickson | 24 | 4,235 | 3,803 |
| Kingston, City | Jas. P. Gildersleeve | 1 | 1,184 | 1,006 |
| Kent | Peter D. McKellar | 18 | 5,148 | 4,269 |
| Lambton | Ed. M. Proctor | 20 | 5,114 | 4,831 |
| Lanark, N. R | John Menzies | ..... | 665 | 680 |
| Lanark, S. R | James Bell | 10 | 1,468 | 1,274 |
| Leeds | Wilmot H. Cole | 15 | 2,428 | 2,194 |
| Lennox and Addington | Stephen Gibson | 16 | 1,272 | 1,250 |
| Lincoln | Jas. G. Currie | 14 | 1,808 | 1,733 |
| London, City | William C. L. Gill | 1 | 1,432 | 1,579 |
| Manitoulin | D. R. Springer | 17 | 273 | 257 |
| Middlesex, N. R | W. C. Noble (Deputy) | 14 | 2,805 | 2,562 |
| Middlesex, W. R | Stephen Blackburn | 9 | 1,537 | 1,218 |
| Muskoka District | J. E. Lount | 24 | 1,271 | 952 |
| Nipissing | William Doran | 52 | 358 | 448 |
| Norfolk | Augustine J. Donley | 12 | 2,190 | 2,150 |
| Northumberland, E. R | A. E. Mallory | 9 | ..... | 1,305 |
| Northumberland, N. R | William H. Eyre | 5 | 691 | 751 |
| Ontario | John H. Perry | 17 | 2,629 | 2,412 |

all the Fees and Emoluments received by the Registrars of Ontario for the year Ontario, 1887, Chapter 114, section 100, with which are contrasted receipts of the

AMOUNT OF FEES RECEIVED UNDER THE TARIFF AS ALLOWED BY SUB-SECTIONS 1-12 OF SECTION 95 OF THIS ACT.

| Total registrations under sub-sections 1, 6, 11, 12. | For searches, sub-sections 2, 3, 10. | For abstracts, sub-section 4. | For certificates, sub-section 5. | For affidavits, deeds and oaths, sub-section 8. | SPECIAL RECEIPTS. | |
|---|---|---|---|---|---|---|
| | | | | | For abstracts, indices, sub-section 9. | For work connected with transfers of instruments paid by county treasurer, sub-section 7. |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 966 20 | 97 55 | 63 60 | 30 90 | ..... | ..... | ..... |
| 3,048 30 | 351 50 | 223 95 | 39 50 | ..... | ..... | ..... |
| 5,460 80 | 245 75 | 1,157 48 | 67 00 | ..... | ..... | ..... |
| 3,162 01 | 312 75 | 579 30 | 96 85 | ..... | ..... | 2,000 00 |
| 2,481 90 | 267 20 | 583 25 | 21 85 | ..... | ..... | ..... |
| 1,482 80 | 132 90 | 120 70 | 1 25 | ..... | 1 25 | ..... |
| 895 20 | 135 20 | 100 10 | 1 00 | ..... | ..... | ..... |
| 996 35 | 110 45 | 116 13 | 2 90 | ..... | ..... | ..... |
| 4,337 50 | 446 20 | 370 40 | 2 50 | 0 25 | ..... | ..... |
| 6,293 48 | 878 40 | 778 50 | 234 90 | ..... | 3 50 | ..... |
| 1,732 00 | 271 00 | 242 45 | ..... | ..... | ..... | ..... |
| 1,337 45 | 112 40 | 98 45 | 20 30 | ..... | 2 65 | ..... |
| 1,645 10 | 114 55 | 159 05 | 7 00 | ..... | 6 25 | ..... |
| 3,927 05 | 333 60 | 865 85 | 41 35 | ..... | ..... | ..... |
| 2,235 10 | 111 38 | 404 80 | 34 35 | ..... | 1 00 | ..... |
| 1,735 80 | 343 60 | 236 17 | 13 25 | ..... | 3 00 | ..... |
| 269 45 | 38 95 | 37 76 | 1 25 | ..... | ..... | ..... |
| 1,971 85 | 380 60 | 179 00 | 10 40 | 3 75 | ..... | ..... |
| 3,838 75 | 357 95 | 919 30 | 37 25 | ..... | 2 50 | ..... |
| 4,926 95 | 338 15 | 1,020 25 | 82 20 | ..... | ..... | ..... |
| 1,365 55 | 200 95 | 99 73 | ..... | ..... | ..... | ..... |
| 5,699 35 | 567 15 | 872 90 | 55 75 | ..... | ..... | ..... |
| 6,343 60 | 1,169 25 | 635 80 | ..... | ..... | ..... | ..... |
| 958 75 | 55 70 | 116 85 | 21 21 | ..... | ..... | ..... |
| 1,772 99 | 227 20 | 138 35 | 15 70 | ..... | ..... | ..... |
| 3,061 11 | 208 10 | 538 95 | 6 50 | ..... | 6 40 | ..... |
| 1,595 19 | 88 21 | 169 25 | 5 85 | ..... | ..... | ..... |
| 2,486 45 | 224 30 | 532 80 | 64 75 | ..... | ..... | ..... |
| 2,007 75 | 357 95 | 259 10 | ..... | ..... | ..... | 4,736 44 |
| 353 63 | 18 05 | 42 10 | 5 85 | ..... | ..... | ..... |
| 3,454 40 | 455 00 | 262 15 | 94 95 | 345 24 | ..... | 321 78 |
| 1,486 50 | 169 85 | 308 95 | 76 80 | ..... | ..... | ..... |
| 1,308 80 | 144 65 | 291 70 | 41 60 | ..... | 2 65 | ..... |
| 651 95 | 8 25 | 24 00 | 1 50 | ..... | 1 00 | ..... |
| 3,027 60 | 378 60 | 327 75 | 69 50 | ..... | 2 75 | ..... |
| 1,981 40 | 193 15 | 869 35 | 17 10 | ..... | ..... | ..... |
| 1,086 80 | 108 90 | 345 80 | 75 | ..... | 25 | ..... |
| 3,276 10 | 212 85 | 433 75 | 40 25 | ..... | ..... | ..... |

STATEMENT of the Returns forwarded to the office of the Provincial Secretary of 1890, made in accordance with the provisions of the Revised Statutes of same nature in the years 1888 and 1889.

| OFFICE. | Gross amount of fees, proper, for 1888. | Gross amount of fees, proper for 1889. | Gross amount of fees, proper, for 1890. | Aggregate amount of fees and emoluments earned by registrar during the year 1890, by virtue of his office. |
|---|---|---|---|---|
| | $ c. | $ c. | $ c. | $ c. |
| Algoma | 2,199 48 | 2,094 25 | 1,158 25 | 1,158 25 |
| Brant | 3,998 20 | 3,780 35 | 3,663 25 | 3,663 25 |
| Bruce | 7,290 72 | 7,663 05 | 6,931 03 | 6,931 03 |
| Carleton | 4,569 10 | 4,008 90 | 4,150 91 | 6,150 91 |
| Dufferin | 3,519 60 | 3,463 02 | 3,354 20 | 3,354 20 |
| Dundas | 1,655 40 | 1,685 95 | 1,738 90 | 1,738 90 |
| Durham, E. R. | 1,420 41 | 1,468 55 | 1,131 50 | 1,131 50 |
| Durham, W. R | 1,466 35 | 1,429 69 | 1,225 83 | 1,225 83 |
| Elgin | 2,914 77 | 4,947 30 | 5,156 85 | 5,156 85 |
| Essex | 7,464 28 | 10,165 02 | 8,188 78 | 3,699 70 |
| Frontenac | ..... | ..... | 2,245 45 | 2,245 45 |
| Glengarry | 1,677 99 | 1,851 25 | 1,571 25 | 1,686 15 |
| Grenville | 2,110 25 | 2,013 15 | 1,931 95 | 1,931 95 |
| Grey, N. R | 5,082 35 | 5,565 15 | 5,167 75 | 5,167 75 |
| Grey, S. R | 3,166 07 | 2,993 08 | 2,835 83 | 2,835 83 |
| Haldimand | 2,273 88 | 2,493 25 | 2,331 82 | 2,331 82 |
| Haliburton | 358 30 | 397 60 | 347 41 | 347 41 |
| Halton | 3,596 25 | 2,391 05 | 2,545 60 | 2,545 60 |
| Hastings | 5,741 95 | 5,403 10 | 5,155 75 | 4,327 87 |
| Huron | 7,529 30 | 7,237 95 | 6,367 55 | 6,367 55 |
| Kingston, City | 1,709 30 | 1,948 10 | 1,667 23 | ..... |
| Kent | 7,637 80 | 8,771 80 | 7,195 15 | 7,195 15 |
| Lambton | 7,931 00 | 8,574 10 | 8,148 65 | 8,148 65 |
| Lanark, N. R | 1,118 31 | 1,172 60 | 1,152 51 | 1,152 51 |
| Lanark, S. R | 2,291 80 | 2,298 80 | 2,154 24 | 2,154 24 |
| Leeds | 3,806 15 | 4,079 20 | 3,821 06 | 3,821 06 |
| Lennox and Addington | 2,289 85 | 2,022 20 | 1,858 50 | 1,858 50 |
| Lincoln | 3,894 90 | 3,404 00 | 3,298 30 | 3,298 30 |
| London, City | 2,142 06 | 2,681 70 | 2,624 80 | 7,361 24 |
| Manatoulin | 241 05 | 446 05 | 419 63 | ..... |
| Middlesex, N. R. | 5,317 95 | 5,392 40 | 4,266 50 | 4,933 52 |
| Middlesex, W. R | 2,563 95 | 2,945 50 | 2,042 10 | 2,042 10 |
| Muskoka District | 2,416 15 | 2,604 65 | 1,789 40 | 1,789 40 |
| Nipissing | 436 85 | 550 40 | 686 67 | 686 67 |
| Norfolk | 3,653 85 | 4,027 95 | 3,806 20 | 3,806 20 |
| Northumberland, E. R. | 3,370 65 | 3,041 81 | 3,061 60 | 3,061 60 |
| Northumberland, N. R | 1,527 35 | ..... | 1,542 50 | 1,542 50 |
| Ontario | 4,131 25 | 3,974 85 | 3,962 95 | 3,962 95 |

all the Fees and Emoluments received by the Registrars of Ontario for the year Ontario, 1887, Chapter 114, section 100, with which are contracted receipts of the

| Amount of fees actually received for 1890. | Amount of disbursements in connection with office for 1890. | Sums payable to Municipalities under Section 107. | | Net earnings of registrars For 1890. |
|---|---|---|---|---|
| | | Amount. | Date when paid. | |
| $ c. | $ c. | $ c. | | $ c. |
| 1,158 25 | 500 17 | ..... | ..... | 658 08 |
| 3.663 25 | 1,094 98 | 198 98 | January 5th, 1891 ..... | 2,568 27 |
| 7,073 12 | 3,830 38 | 1,715 52 | January 14th, 1891.... ..... January 27th, 1891..... | 3,242 74 |
| 6,150 91 | 2,775 00 | 360 36 | April 4th, 1891 ..... | 3,375 91 |
| 3,354 20 | 1,027 50 | 120 84 | Not yet paid ..... ..... | 2,326 70 |
| 1,738 90 | 634 65 | ..... | ..... | 1,104 25 |
| 1,131 50 | 550 75 | ..... | ..... | 580 75 |
| 1,225 83 | 260 00 | ..... | ..... | 965 83 |
| 5,210 17 | 2,559 58 | 855 08 | February 17th, 1891 .... ..... | 2,650 59 |
| 7,756 04 | 4,489 08 | 2,344 39 | April 1st, 1891..... .... .. | 3,266 96 |
| 2.245 45 | 990 50 | ..... | ..... | 1,255 45 |
| 1,381 28 | 470 01 | ..... | ..... | 911 27 |
| 1,931 95 | 830 00 | ..... | ..... | 1,101 95 |
| 5,167 75 | 2,014 67 | 833 87 | January 14th, 1891 ..... | 3,153 08 |
| 2,363 64 | 841 50 | 33 58 | January 13th, 1891..... | 1,522 14 |
| 2,323 24 | 1,020 00 | ..... | ..... | 1,303 24 |
| 347 41 | 15 00 | ..... | ..... | 332 41 |
| 2,545 60 | 966 10 | 4 56 | January 6th, 1891..... | 1,579 50 |
| 5,155 75 | 1,157 25 | 827 88 | ..... | 3,998 50 |
| 6,017 50 | 2,550 00 | 1,433 77 | January 28th, 1891..... | 3,467 50 |
| 1,667 23 | 838 54 | ..... | ..... | 828 69 |
| 6,886 52 | 2,447 57 | 1,847 57 | Paying $200 per month to co. council | 4,438 95 |
| 7,972 02 | 2,835 86 | 1,226 25 | January 15th, 1891..... ..... | 5,136 22 |
| 1,152 51 | 325 00 | ..... | ..... ..... | 827 51 |
| 2,111 10 | 596 03 | ..... | ..... | 1,515 07 |
| 3,488 25 | 1,182 43 | 246 30 | ..... ..... ..... ..... | 2,305 82 |
| 1,858 50 | 645 00 | ..... | ..... ..... | 1,213 50 |
| 3,298 30 | 774 14 | 109 66 | ..... | 2,524 16 |
| 7,361 24 | 4,133 54 | 12 48 | January 15th, 1891.... ..... | 3,227 70 |
| 419 63 | 20 00 | ..... | ..... ..... ..... | 399 63 |
| 4,686 52 | 1,417 00 | ..... | ..... | 3,269 52 |
| 2,042 10 | 500 00 | ..... | ..... | 1,542 10 |
| 1,667 30 | 551 00 | ..... | ..... ..... | 1,116 30 |
| 594 39 | 40 59 | ..... | ..... | 553 80 |
| 3,644 60 | 1,450 00 | 241 86 | January 28th, 1891.. ..... | 2,194 60 |
| 2,731 97 | 1,314 82 | ..... | ..... ..... ..... | 1,417 15 |
| 1,542 50 | 500 00 | ..... | ..... ..... | 1,042 50 |
| 3,946 60 | 1,215 29 | 288 89 | January 15th, 1891.... ..... | 2,731 31 |

STATEMENT of the Returns forwarded to the Office of the Provincial Secretary year 1890, etc.

| OFFICE. | REGISTRAR. | Number of municipalities in the district. | Number of instruments registered during the year 1889. | Number of instruments registered during the year 1890. |
|---|---|---|---|---|
| Ottawa, City | Alexander Burritt | 1 | 2,252 | 2,241 |
| Oxford | G. R. Pattullo | 16 | 3,368 | 3,204 |
| Parry Sound | Thos. Kennedy | 44 | 687 | 611 |
| Peel | James Fleming | 8 | 1,353 | 1,586 |
| Perth, N. R | David D. Hay | 9 | 2,060 | 1,868 |
| Perth, S. R | G. Whelihan | 7 | 1,019 | 1,014 |
| Peterborough | Bernard Morrow | 19 | 2,135 | 1,919 |
| Prescott | John Higginson | 9 | 1,363 | 1,288 |
| Prince Edwards | Walter McKenzie | 9 | 1,233 | 1,111 |
| Rainy River | Frank J. Ap'John | 2 | 257 | 265 |
| Renfrew | Andrew Irving | 25 | 1,771 | 1,804 |
| Russell | James Keays | 6 | 1,008 | 1,080 |
| Simcoe | Samuel Lount | 25 | 5,029 | 4,650 |
| Stormont | John Copeland | 5 | 1,256 | 1,194 |
| Thunder Bay | John M. Munro | 23 | ..... | 667 |
| Toronto, East | Peter Ryan | 1 | 24,420 | 8,671 |
| Toronto West | Charles Lindsay | 1 | ..... | 11,901 |
| Victoria | Hartley Dunsford | 18 | 1,912 | 1,807 |
| Waterloo | Dugall McDugall | 13 | 2,978 | 2,625 |
| Welland | Dexter D'Evnards | 15 | ..... | 2,000 |
| Wellington, N. R | John Anderson | 11 | 1,553 | 1,510 |
| Wellington S. and C. R | N. Higinbotham | 11 | 1,843 | 1,840 |
| Wentworth | James W. Williams | 10 | 4,840 | 5,043 |
| York, E. and W. R | John Ridout | 13 | 9,583 | 8,708 |
| York, N. R | James J. Pearson | 9 | 1,484 | 1,307 |

of all the Fees and Emoluments received by the Registrars of Ontario for the —*Continued.*

Amount of Fees received under the Tariff as allowed by Sub-sections 1-12 of Section 95 of the Act.

| Total registrations under sub-sections 1, 6, 11, 12. | For searches under sub-sections 2, 3, 10. | For abstracts, sub-section 4. | For certificates, sub-section 5. | For affidavits, deeds and oaths, sub-section 8. | Special Receipts. | |
|---|---|---|---|---|---|---|
| | | | | | For abstracts and indices, sub-section 9. | For work connected with transfers of instruments paid by county treasurer, sub-section 7. |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 3,248 00 | 646 05 | 432 85 | 109 55 | ..... ..... | ..... | 300 00 |
| 4,361 30 | 435 75 | 823 05 | 15 75 | ..... | 3 00 | 105 75 |
| 904 65 | 187 70 | 268 95 | 77 50 | ..... | 4 75 | ..... |
| 2,188 75 | 226 90 | 459 15 | 91 55 | ..... | ..... ..... | ..... |
| 2,398 25 | 235 35 | 434 50 | 19 50 | ..... | ..... | ..... |
| 1,323 70 | 81 75 | 309 35 | 34 70 | ..... | ..... | ..... |
| 2,662 00 | 439 00 | 953 00 | 9 50 | .... ..... | ..... | ..... |
| 1,782 05 | 82 40 | 250 78 | 11 50 | ..... | 0 50 | .... ..... |
| 1,469 17 | 167 30 | 260 32 | 5 20 | ..... ..... | 0 50 | ..... |
| 371 20 | 10 75 | 85 82 | 59 10 | ..... | 3 25 | ..... |
| 2,421 20 | 392 80 | 198 50 | 23 75 | ..... | 2 25 | ..... |
| 1,542 00 | 18 50 | 388 15 | 8 00 | ..... | 35 75 | ..... |
| 6,150 55 | 635 39 | 1,436 32 | 34 00 | . .... ..... | ..... | ..... |
| 1,617 95 | 184 35 | 198 95 | 3 75 | ..... | 0 50 | ..... |
| 971 60 | 230 65 | 298 85 | ..... | .. ..... ..... | 1 00 | ..... |
| 13,264 60 | 2,144 75 | 1,680 30 | 73 50 | ..... | ..... ..... | 1,269 48 |
| 17,976 55 | 2,864 30 | 1,207 40 | 58 20 | ..... | ..... | 896 50 |
| 2,527 55 | 205 15 | 747 80 | ..... .. | ..... | ..... | ..... |
| 3,656 00 | 329 90 | 488 15 | 39 15 | ..... | 0 50 | ..... |
| 2,745 80 | 623 55 | 351 70 | 60 05 | ..... | 6 60 | ..... |
| 2,016 40 | 66 60 | 679 45 | 56 45 | ..... ..... | ..... .. | ..... |
| 2,238 15 | 245 95 | 288 50 | 65 65 | ..... | ..... | ..... |
| 6,851 20 | 1,039 45 | 2,083 95 | 16 25 | ..... . | 3 50 | ..... |
| 12,481 70 | 2,029 65 | 1,000 70 | 116 70 | ..... | ..... | 183 50 |
| 1,844 60 | 177 90 | 389 10 | ..... .. | .... ..... | ..... | ..... |

STATEMENT of the Returns forwarded to the office of the Provincial Secretary year 1890, etc.

| OFFICE. | Gross amount of fees, proper, for 1888. | Gross amount of fees, proper, for 1889. | Gross amount of fees, proper, for 1890. | Aggregate amount of fees and emoluments earned by registrar during the year 1890, by virtue of his office. |
|---|---|---|---|---|
| | $ c. | $ c. | $ c. | $ c. |
| Ottawa, City | 3,355 40 | 4,223 50 | 4,436 45 | 4,436 45 |
| Oxford | 6,186 65 | 6,101 15 | 5,744 60 | 5,744 60 |
| Parry Sound | 1,702 35 | 1,611 75 | 1,443 55 | 1,443 55 |
| Peel | 2,989 80 | 2,592 50 | 2,966 35 | 2,966 35 |
| Perth, N. R | 3,397 80 | 3,303 60 | 3,088 60 | 3,088 60 |
| Perth, S. R | 2,268 95 | 1,898 55 | 1,749 50 | 1,749 50 |
| Peterborough | 4,321 50 | 4,042 60 | 4,063 50 | 4,063 50 |
| Prescott | 2,247 50 | 2,274 85 | 2,127 73 | 2,127 73 |
| Prince Edward | 2,255 45 | 2,077 35 | 1,902 49 | 1,902 49 |
| Rainy River | 298 65 | 454 55 | 530 12 | 530 12 |
| Renfrew | 3,194 80 | 3,130 90 | 3,038 50 | 3,038 50 |
| Russell | 1,884 80 | 1,944 50 | 1,992 40 | 1,992 40 |
| Simcoe | 8,113 80 | 7,756 99 | 8,256 76 | 8,286 51 |
| Stormont | ..... | ..... | 2,005 50 | 2,005 50 |
| Thunder Bay | ..... | ..... | 1,502 10 | 1,502 10 |
| Toronto, East | 36,531 95 | 43,400 85 | 17,163 15 | 17,163 15 |
| Toronto, West | ..... | ..... | 22,106 45 | 23,002 95 |
| Victoria | 3,548 77 | 3,492 60 | 3,480 50 | 3,480 50 |
| Waterloo | 4,030 89 | 5,429 75 | 4,513 70 | 4,513 70 |
| Welland | 3,815 60 | 4,639 95 | 3,787 70 | 3,787 70 |
| Wellington, N. R | 3,014 05 | 3,101 85 | 2,841 90 | 2,841 90 |
| Wellington, S. and C. R | 3,317 55 | 3,172 25 | 2,838 25 | 2,838 25 |
| Wentworth | 9,140 75 | 9,319 10 | 9,994 35 | ..... |
| York, E. and W. R | 13,063 00 | 17,471 80 | 15,628 75 | 15,812 25 |
| York, N. R | 2,626 25 | 2,676 55 | 2,411 60 | 2,411 60 |

of all the Fees and Emoluments received by the Registrars of Ontario for the —*Continued.*

| Amount of fees actually received for 1890. | Amount of disbursements in connection with office for 1890. | Sums payable to Municipalities under Section 107. | | Net earnings of registrars for 1890. |
|---|---|---|---|---|
| | | Amount. | Date when paid. | |
| $ c. | $ c. | $ c. | | $ c. |
| 4,436 45 | 1,541 68 | 474 40 | January 19th, 1891 | 2,894 77 |
| 5,359 74 | 1,910 03 | 1,122 30 | January 15th, 1891 | 3,449 71 |
| 1,186 45 | 745 15 | | | 441 30 |
| 2,822 40 | 644 41 | 32 24 | April 11th, 1891 | 2,177 99 |
| 2,983 40 | 1,127 90 | 67 71 | January 15th, 1891 | 1,855 50 |
| 1,544 10 | 552 10 | | | 992 00 |
| 4,063 50 | 1,129 00 | 325 40 | January 27th, 1891 | 2,934 50 |
| 2,127 73 | 409 44 | | | 1,718 29 |
| 1,902 49 | 850 00 | | | 1,052 49 |
| 530 12 | | | | 530 12 |
| 3,038 50 | | 57 70 | January 2nd, 1891 | |
| 1,992 40 | 400 00 | | | 1,592 40 |
| 8,286 51 | 3,423 11 | 2,378 38 | | 4,863 40 |
| 1,729 44 | | | | 1,729 44 |
| 1,502 10 | 389 00 | | | 1,113 10 |
| 18,432 63 | (a) 12,710 93 | (b) 5,562 09 | January 15th, 1891 | 5,721 50 |
| 23,002 95 | (a) 18,727 47 | (b) 9,303 23 | January 15th, 1891 | 4,275 48 |
| 3,328 50 | 1,131 45 | 146 10 | | 2,197 05 |
| 4,448 85 | 1,330 00 | 497 44 | January 15th, 1891 | 3,118 85 |
| 3,714 70 | 1,862 31 | 236 31 | January 26th, 1891 | 1,852 39 |
| 2,385 00 | 750 00 | | | 1,635 00 |
| 2,838 25 | 726 00 | 33 82 | | 2,112 25 |
| 9,424 50 | 5,597 18 | 3,247 18 | | 3,827 32 |
| 15,796 85 | 12,903 75 | 6,064 37 | January 9th, 1891 | 2,893 10 |
| 2,411 60 | 900 00 | | | 1,511 00 |

(*a*) Exclusive of the amount paid to the Provincial Treasurer.
(*b*) Paid to the Treasurer of Ontario under 50 V., c. 116, s. 134.

# EIGHTH ANNUAL REPORT

OF THE

# INSPECTOR OF LEGAL OFFICES

FOR THE YEAR

# 1890.

*PRINTED BY ORDER OF THE LEGISLATIVE ASSEMBLY.*

*TORONTO.*
PRINTED BY WARWICK & SONS, 68 AND 70 FRONT STREET WEST.
1891.

# ANNUAL REPORT

OF THE

# INSPECTOR OF LEGAL OFFICES.

The Honourable O. Mowat,
*Attorney-General of Ontario, etc.*

Sir,—I have the honour to present my Eighth Annual Report on the inspection of the County Judicial Offices throughout the Province, for the year ending 31st December, 1890.

During the year I inspected all the offices under my supervision. The number of offices thus inspected by me was 260, that is to say, the offices of 43 Sheriffs, 39 Local Masters, 14 Deputy Registrars, 25 Local Registrars, 29 County and District Court Clerks, 40 County Crown Attorneys, and 40 Clerks of the Peace.

The following officers were appointed during the year, namely:—

*Sheriffs.*—Alexander William Thompson, Esquire, appointed on the 12th July to be Sheriff in and for the District of Thunder Bay, in the room and stead of John Fitzgerald Clarke, Esquire, deceased. Orson James Phelps, Esquire, appointed on the 29th November, to be Sheriff in and for the County of Simcoe, in the room and stead of Thomas David McConkey, Esquire, deceased.

*Local Masters.*—John Elley Harding, Esquire, Q.C., appointed on the 1st of November to be Local Master at Stratford, in the room and stead of Judge Lizars, resigned. John Machar, Esquire, Q.C., appointed Local Master at Kingston, on the 27th December, in the room and stead of James A. Henderson, Esquire, deceased; and J. E. O'Reilly, Esquire, became sole Local Master at Hamilton, by reason of the death of Miles O'Reilly, Esquire.

*County Attorneys and Clerks of the Peace.*—Thomas Johnson, Esquire, appointed on the 1st November to be District Attorney and Clerk of the Peace in and for the United Provincial District of Muskoka and Parry Sound, in the room and stead of A. Aird Adair, Esquire, resigned; and Elgin Myers,

Q.C., appointed on the 27th December to be County Attorney and Clerk of the Peace for the county of Dufferin, in the room and stead of J. P. McMillan, Esquire, resigned.

*Local Registrars, County Court Clerks and Surrogate Registrars.*—Archibald McGill, Esquire, Deputy Clerk of the Crown became Local Registrar at Kingston, on the 7th December, by virtue of the Judicature Act, on the death of James A. Henderson, Esquire, Deputy Registrar of the Chancery Division of the High Court of Justice, at Kingston. James Meek, Esquire, appointed on the 12th July to be Local Registrar, District Court Clerk, and Surrogate Registrar of the District of Thunder Bay, in the room and stead of Charles Kreissman, Esquire, resigned. The Honourable A. M. Ross, appointed on the 14th June to be County Court Clerk of the County of York, in the room and stead of Walter McKenzie, Esquire, deceased.

## Sheriff's Offices.

No complaint was made against any of these officers during the past year for overcharging, although during my inspection, I discovered that in two offices very slight overcharges had been made; one of these offices being in charge of a deputy, in consequence of the sheriff's death. The overcharges so made were: claiming poundage on the amount recovered instead of the amount paid over, a fee for returning subpœna and an affidavit of service of a county court writ, neither being chargeable, and also a charge for horse hire travelling to execute a writ in addition to the regular allowance for mileage. The overcharges above mentioned did not in the aggregate exceed $15.

In one office I discovered that the sheriff had collected, under an execution against goods, $8.00 solicitor's fees, for issuing a writ against goods and one against lands of the defendant, in a County Court action, thus illegally collecting from the defendant $4.00 for the benefit of the solicitor.

The only instances of carelessness in reference to making entries in the books of office were in the omitting to enter the daily earnings of the office in the fee book each day, and not entering cash received and paid out in the execution book, as well as in the cash and creditors relief books.

In appendix "A," I have set forth, in tabulated form, statistical returns made by the sheriffs for the past year.

## Local Masters.

Upon inspecting these offices I still found that two or three officers, whose fees had been commuted, omitted to collect fees for hearing applications in Chambers, while other officers, whose fees have not been commuted, invariably collected fees for such services in accordance with the tariff. The tariff provides for the payment of $1.00 on every application made to a Master in Chambers.

Should the application be made to a Judge of the County Court, who is also a local master, and whose fees, as such have not been commuted, the charge is collected, but in the case of the two or three officers above referred to, and whose fees were commuted, the payment of the fee is not always insisted upon. Another fee allowed by the tariff, and which has been similarly overlooked, is that of 50c. for forwarding bills of costs in mortgage and other actions under rule 1208 of the Consolidated Rules of Practice. One local master, whose fees were commuted, I discovered had only charged $1.00 an hour in full of all fees for taking examinations instead of $1.50 an hour, 20c. for oath, 20c. for each exhibit, and 10c. for each filing,

Notwithstanding that the established practice of the master's office in passing executors, trustees and receivers' accounts, is to merely initial the vouchers produced, and allow or disallow the same in the account and return them to the parties, two officers charged a fee of 20c. for marking each voucher as an exhibit. Another officer charged 10c. each voucher as a filing. During the past year a receiver was charged $6.20 for filing 62 vouchers, whilst in another office 50 vouchers produced by an executor were charged as exhibits at 20c. each. Such vouchers are not produced or referred to as exhibits nor filings, and nothing should be charged for them.

Local Masters, whose fees have been commuted, have a difficulty in collecting law stamps for their fees from day to day, and frequently allow the amount to accumulate until the settling of the final report. This practice frequently causes unnecessary delay in consequence of the difficulty in collecting fees from an unsuccessful party. In order to prevent any delay to the parties or loss to the government, I gave instructions that all fees should be collected from day to day, or if not then paid no further proceedings in the reference should be allowed until the fees in arrear had been paid. I also gave directions in the matters above mentioned, and the collection of the proper fees of these officers will, no doubt, be attended to in the future.

The statistical returns of the business done by the Masters during the year appear in appendix "B."

---

## Local Registrars, Deputy Registrars, Deputy Clerks of the Crown and County Court Clerks.

In two of these offices I found that sufficient law stamps had not been affixed to the proceedings, showing great carelessness on the part of the officers; the excuse offered being the inability of practitioners to procure law stamps in the County at the time, this I explained was no valid excuse for violating the Law Stamp Act, R.S.O. Cap. 22, Secs. 7 and 8 which provides as follows.

7. "No matter or proceeding whatever upon which a fee is due or payable to the Crown as aforesaid, shall be issued or shall be received or acted upon by any court, or by any officer of any court, until a stamp or stamps nnder this Act for the sum corresponding in amount with the amount of the fee so due or payable to the Crown as aforesaid, for, upon or in respect of such matter or proceeding, and in lieu of the sum so due and payable to the Crown, has or have been attached to or impressed upon the same."

8. "Every matter and proceeding whatever, upon which a fee is due or payable to the Crown as aforesaid, and which is not so duly stamped, shall, if not afterwards stamped under the provisions of this Act, be absolutely void for all purposes whatever."

Three officers neglected paying over the jury fees to the County as soon as collected by them, retaining such monies until the end of the year. I directed them to pay over all jury fees more promptly and at least within the quarter in which they were collected.

Taxing bills of costs is the most difficult as well as the most disagreeable part of the duties these officers have to perform, and considering the astute manner in which some practitioners make up their bills of costs, I am not astonished that mistakes are occasionally made by the most conscientious and experienced officers and larger fees allowed than should be; and when such officers with all carefulness make mistakes I am not surprised that others who have not the necessary experience should fall into the same error in allowing too much, I have informed these officers from time to time that the only safe course is to follow the tariff closely and in difficult cases to apply to myself. I have accordingly advised with them frequently during the past year as in former years with reference to taxations of costs.

While inspecting last year I discovered that no attention whatever had been paid to rules 395 and 396 of the Consolidated Rules of Practice which are as follows:—

395. "Every pleading may be either printed or written, or partly printed and partly written, but no more than four copies of any pleading or other document are to be allowed to any party in a cause or matter, exclusive of the draft, but inclusive of all other copies that may be required or made, in the progress of the cause.

396. "If more than three copies exclusive of the draft are required of any pleading or other document, the party may have the pleading or document printed for the purpose of the cause or matter, and in that case he shall in lieu of all charges for copies be allowed 30c per folio of the pleading or document, and his reasonable disbursements of procuring the same to be printed."

Complaint having been made that one of these officers refused to impress writs of execution with the seal of his office as required by section 126 of The Judicature Act I made inquiry and finding this to be the case instructed the officer to observe the statute for the future. With reference to the fee for impressing the seal to a certificate of an officer to be used in a foreign country, I have been informed that an officer collects the fee in cash for his own use, notwithstanding that it is contrary to provisions of the statute and tariff.

Under Section 22 Chapter 147 R.S.O. each Deputy Clerk of the Crown and Deputy Registrar is required on or before the first day of Hilary term to make out and forward to the Secretary of the Law Society a list of the names of every solicitor who, by the papers or proceedings filed or had in their respective offices, appeared to have practised as such solicitor at any time during the preceding year ending 31st December; upwards of twenty-five of these officers having neglected to make such return, at the request of the Secretary I called their attention to the requirements of the statute when such returns were promptly made.

In entering hire receipts I found that several of the County Court Clerks omitted to index them under the name of the vendee contending that indexing under the name of the vendor was all that was necessary.

I have in appendices "C" and "D" set forth the statistical return of business transacted by these officers during the past year.

## Surrogate Registrars.

Upon the passing of the Act 53 Vic. Chap. 17, amending the Surrogate Courts Act, I sent the following circular letter to these officers in order that they might carry out the provisions of Sections 17 and 18 of said Act:

"Osgoode Hall, Toronto, 8th April, 1890.

"Sir,—I have the honour to inform you that during the last session there was passed an Act amending The Surrogate Act in several respects. By sections 17 and 18 the amount of $200 mentioned in Sections 67 and 68, Chapter 50, R.S.O., has been increased to $400. You will therefore collect on all Probates and Letters of Administration where the property devolving (real and personal) amounts to $400 or under, only the sum of $2 for fees of which the Judge receives 50c. and yourself $1.50.

"I have the honour to be, &c., &c."

During my inspections I found that in a number of cases the officers had issued Probates and Letters of Administration without having collected or cancelled the stamps representing the fee fund or the Judge's fees (where such fees had been commuted). In order to prevent this occurring again I sent to each Surrogate Judge whose fees had been commuted, the following circular letter.

"Osgoode Hall, Toronto, 19th April, 1890.

"My Dear Judge,—During my inspections of the offices of the Surrogate Registrars I have found in several cases that Probates and Letters of Administration had been issued without the stamps representing the Judge's fees or Fee Fund, having been collected or cancelled. The Order-in-Council commuting the fees of the Surrogate Judge contains a condition attached to the commutation, namely, that the Judge should see that the fees to which the Crown is entitled are duly paid in stamps, and such stamps are properly cancelled; if this condition were observed it would assist the Registrar in carrying out the requirements of the Law Stamp Act.

"I trust that I am not taking upon myself too much in calling your attention to this matter.

"I have the honour to be,
"My dear Judge,
"Your obedient servant,
"JOHN WINCHESTER."

In consequence of the practice followed by a number of these officers not being uniform I submitted several questions for the consideration of the Judges of the Surrogate Courts so that some definite conclusion might be arrived at and the practice made uniform; and at their annual meeting, held in the month of June last, they kindly gave the matter their attention and arrived at the conclusions expressed in the following answers:—

"Should a charge for 'Orders approving Bond in Administration matters be made?

"Yes. The practice appears to be to make a separate order approving of the bond, and to charge Judge's order of 50c. therefor. One order might embrace the approval of the bond and the grant of letters."

"Should a charge for an Order for Inventory be made?

"After discussion the Judges came to the conclusion that an order for Inventory was expedient and proper. It was pointed out that the usual inventory filed on application was more for the purpose of fixing the amount of fees than providing for a full and accurate account of the assets of the estate. The practice in the Surrogate Court at Frontenac, under which an order is made directing a full inventory to be filed within sixty days was approved of. It was considered that the form of the present affidavit of value was too vague; the words 'of or about the value of, etc.' being more indefinite than the words 'under the value of, etc.' in use in the English practice."

"Should orders or directions requiring trifling alterations in papers, such as furnishing omitted dates, names in full, descriptions and the like, be charged for—no orders actually made, or necessary to be made, only directions given?

"No. Rule 7 provides for a simple direction.

"Should Surrogate Registrars prepare papers in all matters other than small estates, if requested to do so?

"No. The judges present were of the opinion that the Registrar is only bound to prepare papers when brought in by the parties themselves, or where the amount is under $400. In all other cases the papers for probate should be presented for probate and grant through a solicitor. If there be any doubt upon the subject, such should be removed by a rule expressly confining the duties of the Registrar in preparing papers to such as are personally presented to him by parties applying. He is entitled to a fee of $1 whether he prepares them or not. The preparation and proof leading to probate and grant are often difficult and important, and should not be entrusted to persons not competent or responsible."

"Should rules be adopted relating to the form of probate and Letters of Administration under the Statute of last session where the word 'property' is used in the place of 'real estate?'

"The rules and forms need complete and extensive revision. The present form of probate refers only to 'personal estate.' There does not appear any authority to amend it so as to accord with the 'Devolution of Estates' Act.' The form as to Letters of Guardianship refers to the powers conferred as being 'under any Act of the Parliament of Upper Canada, or of this Province, relating to minors and their property, Chap. 6.' This is an evident incongruity."

"If new rules are being promulgated, would it not be as well to abolish the rules permitting the Registrars drawing papers and charging for them?

"The reply to this is sufficiently indicated by the foregoing answers."

Upon obtaining the opinion of the judges as to the desirability of adopting new rules and forms as above mentioned, I revised the old rules and forms in accordance with the changes made by 53 Vic. Chap. 17, and submitted them to the Board of County Judges, who are now preparing new rules of practice and forms for submission to the judges of the Supreme Court of Judicature for their consideration and adoption pursuant to Section 78 of the Surrogate Courts Act and Section 19 of the above mentioned Act. The new rules to be adopted will, I believe, remove many existing difficulties and make the practice uniform.

Notwithstanding my frequent instructions, I found that carelessness still existed in several offices, especially in attaching the papers leading to grants and putting them away in a neat manner, as also in affixing the proper law stamps on the papers and entering bonds in guardianship matters.

I have in appendix E set forth the statistical returns of business transacted by these officers during the past year.

### County Attorneys and Clerks of the Peace.

During my inspections of these offices I still found that the returns of convictions by justices of the peace had not been entered in a book of record, not-

withstanding my frequent directions in this matter. During the year I have had correspondence with several clerks of the peace as to the fees they were entitled to receive for entering the above returns and the other business performed at the General Sessions, they having difficulty with the Boards of Audit as to allowing the same. I advised them that they were entitled to receive therefor under the new tariff of fees $15 each quarter for the June and December quarters, to be paid by the Province, and for the quarters ending March and September $10 each quarter to be paid by the County. That as the new tariff applied only to work done in the sessions, the old tariff and statute still applied to the work done out of sessions and under these they were entitled to receive $10 each quarter ending March and September from the County.

I also gave my opinion that the fee of 25c. each list allowed under Sections 16 and 17 of the Voters' List Act, R.S.O., Chap. 8, was only allowed for the list for each separate municipality or ward of a municipality, where such municipalities are divided into wards, but not for the list of each polling sub-division, and that the filings under sub-section D of Section 5 should be charged at 8c per filing, the 25c being only allowed for the lists mentioned in Sections 16 and 17.

Many of these officers are also the distributors of law stamps in their respective Counties. In five or six instances I found that they had neglected keeping on hand a proper supply of stamps for the use of practitioners and thereby causing much inconvenience, trouble, and delay, several of the profession being compelled to send to their agents in Toronto to purchase stamps for them. I trust that now an annual inspection of these officers will be had that these complaints will cease.

In appendix "F." I have set forth a schedule containing a return of all fees and emoluments earned and received, and disbursements made, by all the above named officers for the past year; and have also set forth the average gross earnings and net income of each officer for the past five years.

The sufficiency of the security required to be given by all the above named officers has been inquired into, and where necessary new covenants or bonds have been given.

I have the honor to be,
Sir,
Your most obedient servant,
JOHN WINCHESTER.

Osgoode Hall, Toronto, April, 1891.

# APPENDICES.

APPENDIX A.—Containing in Tabulated Form Statistics as returned

| COUNTIES OR DISTRICTS. | NUMBER OF SERVICES OF WRITS OF— | | | | | | MISCELLANEOUS PROCESS SERVED | |
|---|---|---|---|---|---|---|---|---|
| | Summons. | | Subpœna. | | *Ca Re & Ca Sa.* | | | |
| | H. C. J. | C. C. | H. C. J. | C. C. | H. C. J. | C. C. | H. C. J. | C. C. |
| Algoma | 26 | 24 | 5 | 12 | ..... | ..... | 15 | 16 |
| Brant | 41 | 27 | 3 | ..... | ..... | ..... | 12 | 3 |
| Bruce | 47 | 24 | 14 | 30 | 1 | 2 | 23 | 12 |
| Carleton | 205 | 95 | 90 | 49 | ..... | ..... | 84 | 12 |
| Dufferin | 20 | 15 | 4 | ..... | ..... | ..... | 9 | 2 |
| Elgin | 27 | 34 | 21 | 6 | ..... | 1 | 17 | 2 |
| Essex | 32 | 48 | 6 | ..... | 5 | 7 | 2 | 16 |
| Frontenac | 57 | 27 | ..... | 4 | ..... | ..... | ..... | ..... |
| Grey | 55 | 20 | 10 | 8 | 2 | 6 | 5 | 1 |
| Haldimand | 13 | 10 | 11 | 23 | ..... | ..... | 9 | 2 |
| Halton | 22 | 20 | ..... | 21 | ..... | ..... | 8 | 1 |
| Hastings | 77 | 37 | 41 | 30 | 1 | ..... | 16 | 7 |
| Huron | 49 | 36 | 18 | 8 | 3 | 6 | 1 | 8 |
| Kent | 67 | 57 | 36 | 10 | ..... | 1 | 27 | 17 |
| Lambton | 50 | 36 | 12 | 50 | 5 | 3 | 8 | 11 |
| Lanark | 43 | 9 | 2 | 6 | ..... | ..... | 2 | ..... |
| Leeds and Grenville | 62 | 27 | 25 | 21 | 2 | ..... | 28 | 26 |
| Lennox and Addington | 31 | 14 | 5 | 5 | ..... | ..... | 16 | 4 |
| Lincoln | 63 | 28 | 28 | 10 | ..... | 1 | 17 | 2 |
| Middlesex | 54 | 40 | 36 | 62 | 2 | 2 | 19 | 18 |
| Muskoka | 29 | 13 | 56 | 43 | ..... | ..... | 3 | ..... |
| Norfolk | 23 | 12 | 34 | 96 | ..... | 1 | 4 | 10 |
| Northumberland and Durham | 62 | 29 | 14 | 14 | ..... | ..... | 17 | 5 |
| Ontario | 44 | 36 | 10 | 20 | ..... | ..... | 12 | 15 |
| Oxford | 44 | 30 | 4 | 1 | ..... | ..... | 21 | ..... |
| Parry Sound | 22 | 8 | 3 | 11 | ..... | ..... | 8 | 1 |
| Peel | 38 | 22 | 5 | 12 | ..... | ..... | 13 | 2 |
| Perth | 37 | 26 | 12 | 10 | ..... | ..... | 27 | 7 |
| Peterborough | 67 | 34 | 9 | 1 | ..... | ..... | 20 | 2 |
| Prescott and Russell | 60 | 19 | 6 | 9 | ..... | ..... | 4 | 4 |
| Prince Edward | 33 | 21 | 5 | 3 | ..... | ..... | 6 | 2 |
| Rainy River | 11 | 5 | ..... | ..... | ..... | .... | 17 | 1 |
| Renfrew | 48 | 29 | 4 | 13 | ..... | ..... | 2 | ..... |
| Simcoe | 84 | 49 | 5 | 28 | 1 | ..... | 12 | 1 |
| Stormont, Dundas and Glengarry | 60 | 55 | 10 | 15 | ..... | 1 | 4 | 2 |
| Toronto | 530 | 214 | 150 | 18 | 7 | 8 | 214 | 45 |
| Thunder Bay | 23 | 39 | 1 | 5 | ..... | 1 | 21 | 17 |
| Victoria | 35 | 27 | 4 | ..... | ..... | ..... | 14 | 3 |
| Waterloo | 31 | 25 | 3 | 5 | ..... | ..... | 15 | 7 |
| Welland | 34 | 14 | 19 | 11 | 5 | 1 | 6 | 2 |
| Wellington | 41 | 30 | 28 | 39 | ..... | 2 | 5 | 19 |
| Wentworth | 71 | 45 | 17 | ..... | 1 | 1 | 32 | 7 |
| York | 75 | 55 | 15 | 194 | ..... | ..... | 28 | 7 |
| Totals | 2545 | 1465 | 781 | 903 | 35 | 44 | 823 | 319 |

by the different Sheriffs for the year ending 31st December, 1890.

| Total Number of Services. | Number of Estreats Received. | | Number of Writs of Execution | | | | Number of Writs of Renewal Received. | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | (1) Against goods. | | (2) Against lands. | | (1) Against goods. | | (2) Against lands. | |
| | H. C. J. | C. C. | H. C. J. | C. C. | H. C. J. | C. C. | H. C. J. | C. C. | H. C. J. | C. C. |
| 98 | ..... | ..... | 43 | 42 | 36 | 43 | 10 | 12 | 15 | 19 |
| 86 | ..... | ..... | 26 | 37 | 17 | 34 | 4 | 6 | 9 | 17 |
| 153 | ..... | ..... | 47 | 64 | 40 | 57 | 3 | 11 | 18 | 63 |
| 535 | ..... | ..... | 76 | 78 | 52 | 61 | 36 | 36 | 34 | 30 |
| 50 | ..... | ..... | 9 | 35 | 12 | 35 | 6 | 12 | 13 | 20 |
| 108 | ..... | ..... | 23 | 50 | 17 | 39 | 13 | 13 | 19 | 26 |
| 116 | ..... | 1 | 41 | 81 | 23 | 77 | 4 | ..... | 5 | 10 |
| 88 | ..... | ..... | 57 | 38 | 33 | 54 | 10 | 11 | 12 | 18 |
| 107 | ..... | ..... | 43 | 74 | 33 | 74 | 7 | 19 | 22 | 71 |
| 68 | ..... | ..... | 6 | 25 | 4 | 25 | 4 | 2 | 3 | 7 |
| 72 | ..... | ..... | 10 | 26 | 4 | 26 | 2 | 5 | 7 | 7 |
| 209 | ..... | ..... | 77 | 80 | 48 | 73 | 44 | 40 | 57 | 58 |
| 129 | ..... | ..... | 51 | 82 | 40 | 71 | 5 | 5 | 25 | 71 |
| 215 | ..... | ..... | 57 | 115 | 38 | 100 | 22 | 25 | 37 | 46 |
| 175 | ..... | ..... | 20 | 75 | 15 | 79 | 12 | 39 | 23 | 71 |
| 62 | ..... | ..... | 15 | 31 | 10 | 19 | 4 | 6 | 4 | 9 |
| 191 | 2 | ..... | 38 | 77 | 24 | 65 | 4 | 16 | 10 | 30 |
| 75 | ..... | ..... | 25 | 42 | 17 | 18 | 6 | 19 | 8 | 15 |
| 149 | ..... | ..... | 23 | 32 | 18 | 34 | 17 | 11 | 17 | 17 |
| 233 | ..... | ..... | 29 | 90 | 26 | 87 | 23 | 24 | 29 | 40 |
| 144 | ..... | ..... | 14 | 11 | 12 | 11 | 2 | 7 | 3 | 11 |
| 180 | ..... | ..... | 13 | 33 | 10 | 27 | 5 | 7 | 7 | 23 |
| 141 | ..... | ..... | 57 | 98 | 34 | 88 | 35 | 47 | 39 | 74 |
| 137 | ..... | 6 | 24 | 67 | 18 | 53 | 10 | 9 | 24 | 33 |
| 100 | 3 | ..... | 41 | 46 | 39 | 35 | 8 | 8 | 8 | 17 |
| 53 | ..... | 1 | 16 | 16 | 14 | 12 | 2 | 6 | 3 | 11 |
| 92 | ..... | ..... | 16 | 41 | 13 | 37 | 7 | 4 | 17 | 13 |
| 119 | ..... | ..... | 35 | 44 | 21 | 43 | 5 | 19 | 10 | 25 |
| 133 | ..... | ..... | 26 | 65 | 16 | 54 | 2 | 18 | 2 | 22 |
| 102 | ..... | ..... | 24 | 48 | 15 | 44 | 3 | 17 | 13 | 34 |
| 70 | ..... | ..... | 19 | 36 | 16 | 34 | 6 | 5 | 7 | 8 |
| 34 | ..... | ..... | 1 | 8 | 1 | 8 | ..... | 7 | 1 | 3 |
| 96 | ..... | 1 | 30 | 50 | 15 | 31 | 9 | 9 | 5 | 8 |
| 180 | ..... | ..... | 63 | 112 | 56 | 102 | 20 | 17 | 51 | 103 |
| 147 | ..... | ..... | 45 | 76 | 34 | 80 | 24 | 44 | 30 | 75 |
| 1186 | 1 | ..... | 400 | 443 | 308 | 400 | 34 | 18 | 169 | 174 |
| 117 | ..... | ..... | 23 | 46 | 22 | 38 | 7 | 21 | 6 | 23 |
| 83 | ..... | ..... | 21 | 59 | 20 | 49 | 7 | 36 | 10 | 50 |
| 86 | ..... | ..... | 13 | 46 | 9 | 42 | 3 | 2 | 1 | 13 |
| 92 | ..... | ..... | 18 | 46 | 13 | 43 | 13 | 13 | 17 | 20 |
| 164 | ..... | ..... | 44 | 68 | 32 | 62 | 21 | 30 | 33 | 40 |
| 174 | 1 | ..... | 64 | 82 | 44 | 65 | 34 | 30 | 50 | 45 |
| 374 | ..... | 4 | 113 | 165 | 107 | 165 | 5 | 8 | 96 | 95 |
| 6913 | 7 | 13 | 1836 | 2880 | 1376 | 2594 | 498 | 694 | 969 | 1565 |

APPENDIX A.—Containing in Tabulated Form Statistics as returned by the

| COUNTIES OR DISTRICTS. | NUMBER OF SALES UNDER WRITS OF EXECUTION. | | | | Number of cases entered under the Creditors' Relief Act. | Number of Certificates received under this Act. | Assignments to Sheriffs under R. S. O., 1887, Cap. 124. |
|---|---|---|---|---|---|---|---|
| | (1) Against goods. | | (2) Against lands. | | | | |
| | H. C. J. | C. C. | H. C. J. | C. C. | | | |
| Algoma | | | | 2 | 2 | | 4 |
| Brant | 2 | | | | 1 | 1 | |
| Bruce | 5 | 6 | 1 | 2 | 8 | 11 | 1 |
| Carleton | | 5 | 1 | 1 | 6 | 4 | 2 |
| Dufferin | | | | | | | 4 |
| Elgin | 1 | 1 | | 1 | 3 | | 3 |
| Essex | | 1 | 2 | 1 | 3 | | 3 |
| Frontenac | | | | | | | |
| Grey | 3 | 1 | 2 | 2 | 12 | 6 | |
| Haldimand | 2 | | | 2 | 2 | 1 | |
| Halton | 1 | 2 | 1 | | 2 | | |
| Hastings | 8 | 3 | 1 | 1 | 7 | 5 | 9 |
| Huron | | 2 | | 2 | 2 | 2 | 3 |
| Kent | 9 | 15 | | 1 | 6 | 14 | 4 |
| Lambton | | 1 | | 1 | | | 6 |
| Lanark | 2 | | | | 2 | 4 | |
| Leeds and Grenville | 6 | 2 | 1 | 3 | 12 | 22 | 7 |
| Lennox and Addington | 2 | 4 | 1 | | 8 | 5 | 6 |
| Lincoln | | | 1 | 1 | 2 | 1 | 4 |
| Middlesex | 1 | 2 | | 1 | 3 | 1 | |
| Muskoka | 1 | | 1 | | | | 1 |
| Norfolk | 3 | | 1 | 1 | 4 | 4 | 2 |
| Northumberland and Durham | 6 | 4 | | | 8 | 2 | 1 |
| Ontario | | 1 | | 1 | 2 | | 2 |
| Oxford | 5 | | 2 | | 5 | 7 | 1 |
| Parry Sound | 2 | 2 | | | 1 | 1 | 1 |
| Peel | | 1 | 1 | 1 | 2 | 1 | |
| Perth | 9 | 2 | | 2 | 12 | 1 | 2 |
| Peterborough | 2 | 2 | | 1 | 4 | | 3 |
| Prescott and Russell | 2 | 3 | 1 | | 7 | 9 | 7 |
| Prince Edward | 5 | 1 | | | 3 | 3 | 6 |
| Rainy River | | 1 | | | 1 | 10 | |
| Renfrew | 4 | 7 | | 1 | 1 | 4 | |
| Simcoe | 3 | 4 | 2 | 6 | 7 | | 1 |
| Stormont, Dundas and Glengarry | 3 | | 1 | 4 | 6 | 2 | 17 |
| Toronto | 9 | 7 | | 1 | 13 | 4 | 1 |
| Thunder Bay | 1 | 3 | | | 2 | 2 | 3 |
| Victoria | 2 | 4 | | | 3 | | 2 |
| Waterloo | 1 | 1 | 1 | | 3 | 7 | 9 |
| Welland | 1 | 3 | 1 | | 5 | | 2 |
| Wellington | 1 | 2 | 1 | 1 | 6 | 14 | 3 |
| Wentworth | 1 | 3 | | | 3 | | |
| York | 3 | 1 | 1 | 2 | 7 | | 3 |
| Totals | 106 | 97 | 23 | 42 | 186 | 148 | 122 |

different Sheriffs for the year ending 31st December, 1890.—*Continued.*

| Amount Endorsed on Writs of Execution against Goods (not Renewals). | | | | Amount Realized by Actual Sales under Writs of Execution. | | | |
|---|---|---|---|---|---|---|---|
| (1) For Debt or Damages. | | (2) For Solicitors Costs Taxed. | | (1) Against goods. | | (2) Against lands. | |
| H. C. J. | C. C. | H. C. J. | C. C. | H. C. J. | C. C. | H. C. J. | C. C. |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 176609 77 | 8214 47 | 1243 96 | 1423 18 | ..... | ..... | ..... ..... | 22 01 |
| 17147 98 | 5530 23 | 1325 23 | 412 50 | 4951 09 | ..... ..... | ..... | ..... ..... |
| 51102 78 | 9861 98 | 2879 68 | 831 93 | 1689 66 | 251 92 | 89 95 | 307 37 |
| 242259 45 | 3621 84 | 13394 43 | 1166 27 | ..... | 441 11 | 500 00 | 244 50 |
| 3913 33 | 4671 57 | 374 28 | 354 30 | ..... | ..... | ..... ..... | ..... ... |
| 18826 78 | 9094 37 | 774 07 | 773 37 | 126 00 | 18 00 | ..... | 11 00 |
| 25738 78 | 13916 72 | 1553 57 | 1115 54 | ..... ... | 24 74 | ..... ..... | ..... |
| 49125 75 | 6405 62 | 721 40 | 218 10 | 875 38 | 376 39 | ..... | ..... ..... |
| 66646 52 | 114575 78 | 2889 21 | 1002 45 | 859 00 | 18 00 | 900 00 | 245 00 |
| 21496 88 | 3392 58 | 99 42 | 343 98 | 480 21 | ..... | ..... | 411 38 |
| 5503 99 | 3864 23 | 688 04 | 438 27 | 304 00 | 344 80 | 120 00 | ... ..... |
| 134813 29 | 16034 00 | 6693 56 | 1437 16 | 3512 31 | 1855 19 | 15 00 | 16 00 |
| 28243 22 | 12027 26 | 2431 00 | 662 79 | ..... | 607 45 | ..... | 1012 00 |
| 64443 76 | 202 51 | 2345 38 | 2173 11 | 4296 95 | 3528 87 | ..... | 35 00 |
| 10764 47 | 12820 77 | 1356 03 | 1624 06 | ..... ..... | ..... ..... | ..... | ..... ..... |
| 11279 45 | 4196 84 | 916 54 | 480 60 | 928 00 | ..... ..... | ..... | ..... ..... |
| 36566 76 | 8016 72 | 2707 72 | 982 66 | 1170 34 | 25 00 | 2100 00 | 503 00 |
| 20732 28 | 4067 53 | 1490 03 | 207 39 | 1049 70 | 314 38 | 20 00 | ..... ..... |
| 24638 39 | 4341 58 | 1772 53 | 1053 12 | ..... | ..... ... . | 10 00 | 740 00 |
| 41467 64 | 15799 99 | 1412 51 | 1142 49 | 80 00 | 466 00 | ..... ..... | ..... ..... |
| 8475 75 | 1433 02 | 631 97 | 150 85 | 120 00 | ..... | 374 00 | ..... ..... |
| 15686 30 | 4842 02 | 799 54 | 537 86 | 587 35 | ..... ..... | 670 00 | 420 00 |
| 79580 64 | 17237 65 | 3365 30 | 1573 30 | 1057 48 | 355 15 | ..... | ..... ..... |
| 66294 74 | 13187 76 | 1218 93 | 795 31 | ..... .. | 25 00 | ..... ..... | 195 00 |
| 40179 10 | 9015 88 | 2098 86 | 904 03 | 3190 90 | ..... ... | 210 00 | ..... .. ..... |
| 40819 11 | 2372 48 | 1996 60 | 233 11 | 222 11 | 225 66 | ..... | ..... ..... |
| 20686 93 | 6153 60 | 412 35 | 937 60 | ..... ..... | 225 45 | 335 15 | 134 45 |
| 133989 59 | 6766 88 | 2495 33 | 484 69 | 6586 42 | 668 36 | ..... | 1125 00 |
| 26653 24 | 8950 81 | 1566 30 | 546 35 | 702 98 | 188 88 | . ..... | 20 00 |
| 13675 48 | 7295 05 | 1601 25 | 929 70 | 528 25 | 814 17 | 1340 00 | ..... |
| 27436 74 | 5760 87 | 805 99 | 516 39 | 246 50 | 188 30 | ..... | ..... |
| 616 00 | 3448 62 | 205 24 | 282 72 | ..... ..... | 481 32 | ..... | ..... ..... |
| 21632 18 | 9920 86 | 1825 39 | 1123 90 | 791 08 | 1127 02 | ..... | 266 74 |
| 106711 57 | 16209 75 | 2693 53 | 1008 57 | 476 30 | 371 53 | 5 00 | 386 00 |
| 38007 46 | 13269 87 | 2374 62 | 1163 57 | 679 50 | 487 35 | 1076 00 | 906 35 |
| 882630 74 | 83364 75 | 24264 68 | 7787 76 | 2358 90 | 2457 35 | ..... | 150 00 |
| 163394 58 | 11309 48 | 1220 74 | 1459 76 | 1 11 | 490 70 | ..... | ..... . |
| 27314 06 | 8912 52 | 939 18 | 602 75 | 128 39 | 582 74 | ..... | ..... ..... |
| 13001 89 | 8513 45 | 284 10 | 338 19 | 230 50 | 252 03 | 730 00 | ..... |
| 11516 98 | 7035 09 | 498 21 | 369 06 | 231 25 | 173 25 | 70 00 | ..... ..... |
| 39907 07 | 19563 80 | 2295 79 | 1089 29 | 1699 57 | 2334 24 | 86 00 | 171 20 |
| 73054 48 | 13763 85 | 5845 28 | 1382 95 | 85 77 | 92 45 | ..... | ..... ..... |
| 122746 58 | 27931 49 | 3911 68 | 2270 92 | 130 70 | 1833 91 | 185 05 | 475 57 |
| 3025332 48 | 463415 94 | 110119 45 | 44331 00 | 40377 70 | 21647 41 | 8836 15 | 7797 57 |

APPENDIX A.—Containing in Tabulated Form Statistics as Returned by the

| COUNTIES OR DISTRICTS. | AMOUNT RECEIVED FOR FINES, PENALTIES, ETC. | | AMOUNT RECEIVED UNDER WRITS OF *Ca Re* AND *Ca Sa*. | | AMOUNT REALIZED UNDER WRITS OF EXECUTION WITHOUT ACTUAL SALE. | |
|---|---|---|---|---|---|---|
| | H. C. J. | C. C. | H. C. J. | C. C. | H. C. J. | C. C. |
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Algoma | | 10 00 | | | 4508 27 | 1557 25 |
| Brant | | 30 00 | | | 380 05 | 315 68 |
| Bruce | | | | | 2773 18 | 790 45 |
| Carleton | 80 00 | 50 00 | | | 3132 41 | 2256 65 |
| Dufferin | | | | | 560 60 | 316 97 |
| Elgin | | | | | 397 85 | 1719 39 |
| Essex | | | | | 3604 75 | 957 45 |
| Frontenac | | | | | 521 38 | 388 38 |
| Grey | | 30 00 | 16 66 | 485 16 | 2019 93 | 2859 64 |
| Haldimand | | 5 00 | | | 477 70 | |
| Halton | | | | | 1530 20 | 1529 79 |
| Hastings | 60 00 | | | | 4014 43 | 2648 89 |
| Huron | | | | | 732 84 | 1261 52 |
| Kent | | 50 00 | | | 2299 96 | 287 13 |
| Lambton | | 500 00 | | 217 46 | 29 28 | 827 74 |
| Lanark | | | | | 227 61 | 115 80 |
| Leeds and Grenville | 1002 00 | | | | 1357 75 | 1958 60 |
| Lennox and Addington | | | | | 684 40 | 122 70 |
| Lincoln | | | | 120 00 | 448 32 | 1138 40 |
| Middlesex | | | | 146 00 | 1840 48 | 1436 37 |
| Muskoka | | | | | 488 16 | 197 82 |
| Norfolk | | | | | | 700 76 |
| Northumberland and Durham | | | | | 3295 35 | 1318 54 |
| Ontario | | | | | 905 57 | 3463 87 |
| Oxford | | | | | 383 24 | 1008 27 |
| Parry Sound | | 125 00 | | | 458 83 | 705 30 |
| Peel | | | | | 1204 92 | 3770 34 |
| Perth | | | | | 307 50 | 271 56 |
| Peterborough | | | | | 64 75 | 1436 39 |
| Prescott and Russell | | | | | 787 91 | 949 85 |
| Prince Edward | | | | | 503 13 | 268 42 |
| Rainy River | | | | | | 1142 52 |
| Renfrew | | 9 50 | | | 1632 59 | 3599 46 |
| Simcoe | | 2 00 | | | 1991 11 | 1538 00 |
| Stormont, Dundas and Glengarry | 20 00 | | | | 1434 75 | 5043 47 |
| Toronto | 25 00 | | | | 5265 23 | 6574 55 |
| Thunder Bay | | | | | 180 74 | 1878 42 |
| Victoria | | | | | 955 98 | 1106 99 |
| Waterloo | | | | | 124 90 | 704 84 |
| Welland | | | | | 189 98 | 1108 64 |
| Wellington | | | | | 333 45 | 358 33 |
| Wentworth | | | | | 263 47 | 657 11 |
| York | | 247 00 | | | 2016 14 | 676 90 |
| Totals | 1187 00 | 1058 50 | 16 66 | 968 62 | 54329 09 | 60969 09 |

different Sheriffs for the year ending 31st December, 1890.—*Continued.*

| Amount of Fees earned for the Administration of Justice payable by the Province. | Amount of Fees so earned payable by the County. | Amount of fees otherwise earned. | Amount paid by the Province as salary. | Total amount of Fees earned. | Total amount of Disbursements. | Net amount of income. | Remarks. |
|---|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | |
| 738 99 | ..... | 1581 60 | 1000 00 | 3320 59 | 1491 01 | 1829 58 | |
| 1175 50 | 417 20 | 787 75 | ..... | 2380 45 | 1200 00 | 1180 45 | |
| 942 70 | 524 77 | 2448 41 | ..... | 3915 88 | 1099 70 | 2816 18 | |
| 2037 47 | 463 46 | 3154 37 | ..... | 5655 30 | 2734 00 | 2921 30 | |
| 566 85 | 439 99 | 1897 99 | ..... | 2904 83 | 867 03 | 2037 80 | |
| 1219 24 | 370 57 | 1646 76 | ..... | 3236 57 | 1691 32 | 1545 25 | |
| 1351 80 | 455 00 | 3363 56 | ..... | 5170 36 | 1500 75 | 3669 61 | |
| 1038 04 | 467 49 | 764 83 | 100 00 | 2370 36 | 623 33 | 1674 03 | |
| 850 64 | 1916 24 | 2212 82 | .... .... | 4979 70 | 2073 20 | 2906 50 | |
| 990 41 | 378 46 | 635 99 | 100 00 | 2104 86 | 550 16 | 1554 70 | |
| 737 96 | 354 93 | 509 71 | .... ..... | 1602 60 | 495 00 | 1107 60 | |
| 1422 37 | 611 67 | 2723 49 | ..... | 4757 53 | 2174 93 | 2545 40 | |
| 795 50 | 442 75 | 2214 13 | ..... | 3452 38 | 1610 27 | 1842 11 | |
| 879 70 | 788 15 | 2335 46 | ..... | 4003 31 | 1668 60 | 2334 71 | |
| 1048 90 | 495 17 | 1627 37 | ..... | 3171 44 | 1247 56 | 1923 88 | |
| 612 05 | 419 58 | 686 23 | .... .... | 1717 86 | 559 81 | 1158 05 | |
| 1112 20 | 793 53 | 2133 56 | ..... | 4039 29 | 1139 02 | 2900 27 | |
| 755 62 | 399 75 | 1303 89 | .... . | 2459 26 | 1317 46 | 1141 80 | |
| 540 55 | 570 14 | 1374 83 | .. ..... | 2485 52 | 739 36 | 1746 16 | |
| 1451 18 | 1436 51 | 1473 95 | .... | 4361 64 | 1836 00 | 2525 64 | |
| 1157 74 | ..... .... | 397 60 | 500 00 | 2055 34 | 529 29 | 1526 05 | |
| 764 42 | 553 35 | 1255 81 | ..... | 2573 58 | 1376 14 | 1197 44 | |
| 887 70 | 682 78 | 2226 31 | ..... | 3796 89 | 2590 07 | 1206 72 | |
| 1085 27 | 500 70 | 1617 62 | ..... | 3203 59 | 1564 58 | 1639 01 | |
| 1134 60 | 75 83 | 825 83 | .... .... | 2036 26 | 1208 11 | 828 15 | |
| 804 05 | ..... ... | 814 31 | 500 00 | 2118 36 | 725 65 | 1392 71 | |
| 775 32 | 384 45 | 1274 07 | ..... | 2433 84 | 1239 40 | 1194 44 | |
| 59 00 | 1045 95 | 1593 93 | ..... | 2698 88 | 1206 47 | 1492 41 | |
| 849 41 | 474 02 | 1023 55 | ..... | 2346 98 | 480 90 | 1866 08 | |
| 732 57 | 490 18 | 1564 03 | 500 00 | 3286 78 | 908 02 | 2378 36 | |
| 500 91 | 392 75 | 671 35 | 200 00 | 1765 01 | 981 92 | 783 09 | |
| 539 00 | .... | 284 14 | 1000 00 | 1823 14 | 511 37 | 1311 77 | |
| 669 79 | 476 99 | 1880 54 | ..... .... | 3027 32 | 1072 22 | 1955 10 | |
| 1533 60 | 656 18 | 3065 23 | ..... | 5255 01 | 2197 05 | 3057 96 | |
| 890 02 | 1081 82 | 1663 45 | ... ..... | 3635 29 | 1021 53 | 2613 76 | |
| 478 20 | 5016 82 | 13328 69 | ..... | 18823 71 | 10158 54 | 8665 22 | |
| 666 98 | ..... | 1202 42 | 800 00 | 2669 40 | 543 60 | 2125 80 | |
| 673 55 | 774 18 | 1223 66 | ... .... | 2671 39 | 601 00 | 2070 39 | |
| 1125 30 | 440 43 | 892 06 | 100 00 | 2557 79 | 952 61 | 1605 18 | |
| 712 40 | 640 65 | 1017 01 | ..... | 2370 06 | 761 09 | 1608 97 | |
| 830 15 | 346 66 | 1825 29 | ..... | 3002 10 | 1760 86 | 1241 24 | |
| 3139 20 | 536 81 | 1705 92 | ..... | 5381 93 | 2979 43 | 2402 50 | |
| 3862 60 | 583 95 | 4372 73 | ..... | 8819 28 | 3707 29 | 5111 99 | |
| 44139 45 | 26899 86 | 80602 56 | 4800 00 | 156441 56 | 65695 65 | 90745 91 | |

APPENDIX B.—Being a Return of Business transacted by Local Masters throughout the

| COUNTIES OR DISTRICTS. | NUMBER OF ORDERS MADE FOR THE FOLLOWING PURPOSES: (1) For the Administration of estates. | (2) For the partition or sale of property. | (3) Relative to infants under R. S. O., chap. 40, s. 76 (Examination only). | (4) Under the Winding-up Acts. | (5) Other Orders made in Chambers. | Number of examinations taken as special examiners or otherwise before trial. |
|---|---|---|---|---|---|---|
| Algoma | | | | | | |
| Brant | 2 | | | | 3 | |
| Bruce | | | | | 14 | 7 |
| Carleton | | 4 | | | 133 | 35 |
| Dufferin | | | | | 5 | 2 |
| Elgin | 4 | | | | 1 | 23 |
| Essex | 4 | 1 | 4 | | 11 | 16 |
| Frontenac | | 3 | | | | 37 |
| Grey | | 1 | | | 1 | 2 |
| Haldimand | | | | | | |
| Halton | | | | | | |
| Hastings | | 1 | | | 87 | 39 |
| Huron | 3 | 2 | | | 21 | 6 |
| Kent | 1 | 3 | 2 | | 7 | 24 |
| Lambton | | | | | | |
| Lanark | | 3 | | | 2 | |
| Leeds and Grenville | | 2 | | | 16 | 7 |
| Lennox and Addington | | 4 | | | 12 | 5 |
| Lincoln | 5 | | | | 3 | 20 |
| Middlesex | 2 | 3 | | | | 31 |
| Muskoka and Parry Sound | | | | | 2 | 2 |
| Norfolk | | | | | 6 | 6 |
| Northumberland and Durham | | 1 | | | 49 | 3 |
| Ontario | | | | | 18 | 1 |
| Oxford | | 3 | | | | 14 |
| Peel | | | | | 2 | |
| Perth | | | | | 1 | |
| Peterborough | | | | | 33 | 3 |
| Prescott and Russell | | 1 | | | | |
| Prince Edward | 1 | | | | 11 | 2 |
| Renfrew | | | | | 1 | 2 |
| Simcoe | | 1 | | | 64 | 23 |
| Stormont, Dundas and Glengarry | 1 | 3 | | | 35 | 6 |
| Thunder Bay | | 1 | | | 51 | 1 |
| Victoria | | | | | 25 | |
| Waterloo | | | | | 30 | |
| Welland | | | | | 5 | |
| Wellington | | 2 | | | 80 | 50 |
| Wentworth | 2 | 1 | | 1 | 51 | 1 |
| Totals | 25 | 40 | 6 | 1 | 780 | 368 |

Province of Ontario, other than Toronto during the year ending 31st December, 1890.

NUMBER OF JUDGMENTS OR ORDERS BROUGHT INTO THE MASTER'S OFFICE FOR TAKING THE FOLLOWING ACCOUNTS, ETC. :

| Administration of estates. | Executors, trustees or committees accounts and compensation. | Foreclosure of mortgage or bond. | Redemption of mortgage or bond. | Sale under mortgage or agreement. | Account on any charge or lien on land, other than under Mechanics' Lien Act. | Account under Mechanics' Lien Act. | Specific performance. | Partnership accounts. | Alimony. | Partition or sale. | Damages for breach of contract or covenant. | Work and labor done. | Money received, paid, advanced or lent. | Goods sold and delivered. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ..... | ..... | 1 | ..... | ..... | ..... | 1 | ..... | ..... | ..... | 1 | ..... | ..... | ..... | ..... |
| 1 | ..... | 6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| 1 | ..... | ..... | ..... | ..... | 2 | 1 | 1 | ..... | ..... | 1 | ..... | ..... | ..... | 1 |
| 1 | ..... | 15 | 3 | 4 | ..... | 2 | ..... | 2 | 1 | 4 | 1 | 2 | 2 | ..... |
| 3 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... |
| 2 | 2 | ..... | 2 | 1 | ..... | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... |
| 4 | 2 | ..... | 1 | 1 | 1 | ..... | ..... | ..... | ..... | 2 | 1 | ..... | ..... | ..... |
| 1 | 1 | 5 | 3 | 3 | 2 | ..... | 1 | ..... | 3 | 1 | 2 | 1 | ..... | ..... |
| ..... | 1 | ..... | ..... | 2 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 4 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 2 | 1 | 1 | 3 | 15 | 1 | ..... | 2 | 3 | 3 | 1 | 2 | 1 | ..... | 2 |
| ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... | ..... |
| 1 | 1 | ..... | 4 | 1 | ..... | 1 | ..... | ..... | 1 | 3 | ..... | ..... | ..... | ..... |
| ..... | ..... | 1 | ..... | ..... | 1 | 2 | ..... | ..... | ..... | 1 | ..... | ..... | ..... | ..... |
| ..... | ..... | 2 | ..... | 14 | ..... | ..... | ..... | ..... | ..... | 3 | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 3 | ..... | ..... | ..... | ..... |
| 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... | ..... |
| 5 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 2 | 1 | 1 | ..... | ..... | 1 | ..... | 1 | ..... | ..... | 4 | ..... | ..... | ..... | ..... |
| ..... | ..... | 2 | ..... | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1 | ..... | 4 | ..... | 4 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1 | 4 | 5 | 1 | 3 | ..... | 1 | 1 | ..... | ..... | 1 | ..... | ..... | ..... | ..... |
| ..... | ..... | 3 | ..... | 1 | 1 | ..... | ..... | ..... | ..... | ..... | 2 | 1 | ..... | ..... |
| ..... | 1 | 1 | ..... | 3 | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... | ..... |
| ..... | ..... | 2 | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 | ..... | ..... | ..... | ..... |
| 2 | 1 | 2 | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | 1 | ..... | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 3 | ..... | ..... | ..... | 7 | ..... | ..... | 1 | ..... | ..... | 1 | ..... | ..... | ..... | ..... |
| 2 | ..... | 24 | 1 | 3 | ..... | 1 | ..... | ..... | ..... | 3 | ..... | 1 | ..... | 2 |
| ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 2 | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 3 | 5 | 5 | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 2 | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1 | ..... | 1 | ..... | 4 | 1 | ..... | ..... | 1 | ..... | 2 | ..... | 1 | ..... | 1 |
| 7 | 3 | 5 | ..... | 9 | 1 | 3 | ..... | ..... | 2 | ..... | ..... | 1 | 2 | 1 |
| 53 | 26 | 95 | 18 | 93 | 12 | 17 | 7 | 8 | 11 | 41 | 9 | 9 | 6 | 7 |

APPENDIX B.—Being a Return of Businesss transacted by Local

| COUNTIES OR DISTRICTS. | NUMBER OF JUDGMENTS OR ORDERS, ETC.—*Continued.* | | | | | | Number of advertisements of sale issued. | Number of reports issued. |
|---|---|---|---|---|---|---|---|---|
| | Promissory notes, bills of exchange. | Infant's estates. | Quieting Title matter. | Lunacy. | Winding-up Act. | Miscellaneous. | | |
| Algoma | | | | | | | | 2 |
| Brant | | | | | | | 5 | 12 |
| Bruce | | 2 | | | | | 2 | 6 |
| Carleton | | | | | 1 | 2 | 9 | 62 |
| Dufferin | | | | | | 1 | 1 | 6 |
| Elgin | | | | 2 | | | 7 | 17 |
| Essex | | | | | | | 7 | 17 |
| Frontenac | 1 | 2 | 1 | | | | 4 | 25 |
| Grey | | | | | 1 | | 3 | 3 |
| Haldimand | | | | | | | 1 | |
| Halton | | | | | | | 4 | 4 |
| Hastings | | | | 1 | | | 14 | 31 |
| Huron | | | 1 | | | 2 | 4 | 28 |
| Kent | | 2 | | 1 | | | 8 | 9 |
| Lambton | | | | | | | 1 | 4 |
| Lanark | | | | | | 1 | 8 | 20 |
| Leeds and Grenville | | | | | | 1 | 7 | 12 |
| Lennox and Addington | | | | | | 1 | 4 | 10 |
| Lincoln | | | | | | 1 | 8 | 14 |
| Middlesex | | | | | | 1 | 6 | 15 |
| Muskoka and Parry Sound | | | | | | | | 3 |
| Norfolk | | | | | | | | 3 |
| Northumberland and Durham | | | 1 | | | | 4 | 18 |
| Ontario | | | | 3 | | | 6 | 16 |
| Oxford | | 1 | 2 | | | | 8 | 20 |
| Peel | | | | | | 1 | 3 | 9 |
| Perth | | | | | | | 1 | 4 |
| Peterborough | | | | | | | 2 | 7 |
| Prescott and Russell | | | | | | | 1 | 2 |
| Prince Edward | | | | | | | 9 | 12 |
| Renfrew | | | | | | | | 2 |
| Simcoe | | | | | | | 10 | 22 |
| Stormont, Dundas and Glengarry | | | 1 | | | | 13 | 41 |
| Thunder Bay | | | | | | | 1 | |
| Victoria | | | | | | | 5 | 7 |
| Waterloo | | | 1 | | | | 4 | 9 |
| Welland | | | | | | | | 6 |
| Wellington | | | | 1 | | 1 | 4 | 18 |
| Wentworth | | | | | 2 | | 14 | 39 |
| Totals | 1 | 7 | 7 | 8 | 4 | 12 | 188 | 535 |

Masters throughout the Province of Ontario, etc.—*Continued.*

| Number of references pending at date of return. | Number of bills of costs taxed by Master. | Amount realized by sales held under the direction of Master. | Amount of costs of references, etc., taxed by Master or under his direction. | Amount of commission allowed in administration and partition matters. | Amount of fees earned by Local Masters. | Remarks. |
|---|---|---|---|---|---|---|
| | | $ c. | $ c. | $ c. | $ c. | |
| 2 | .... | ..... | 34 70 | ..... .. ... | 35 00 | |
| 6 | 11 | 13760 00 | 546 23 | 589 00 | 195 00 | |
| 4 | 7 | 3400 00 | 1038 57 | 191 00 | 156 00 | |
| 7 | 32 | 26923 62 | 4058 40 | 4783 33 | 2476 61 | |
| 4 | 11 | ... ..... | 897 79 | 222 60 | 179 10 | |
| 14 | 30 | 14710 00 | 5477 35 | 894 05 | 1464 81 | |
| 5 | 16 | 11749 15 | 1181 62 | 683 87 | 737 15 | |
| 4 | 34 | 5000 00 | No return. | ..... | 796 43 | |
| 6 | 36 | 4970 00 | 731 18 | .... ..... | 152 66 | |
| 1 | ..... | 1250 00 | ..... | ..... | 5 30 | |
| 2 | 2 | 2197 25 | 564 25 | 79 30 | 123 70 | |
| 25 | 35 | 16080 00 | 4708 87 | 729 15 | 1532 90 | |
| 5 | 16 | 16987 00 | 1471 06 | 526 00 | 507 11 | |
| 3 | 15 | 15875 00 | ..... .... | ..... | 1259 10 | |
| 2 | ..... | 1200 00 | ..... | .... ..... | 39 94 | |
| 6 | 15 | 12635 00 | 1053 15 | 913 65 | 409 90 | |
| 2 | 9 | 11430 00 | 1953 09 | 188 36 | 248 48 | |
| 5 | 6 | 12650 00 | 194 34 | 386 50 | 536 50 | |
| 4 | 12 | 21560 00 | 844 40 | 715 05 | 759 08 | |
| 5 | 26 | 16420 00 | 2913 97 | 815 15 | 905 24 | |
| 1 | 1 | ..... | ..... | ..... | 113 10 | |
| ..... | 1 | ..... | 348 25 | .... .... | 211 00 | |
| 9 | 19 | 875 00 | 2043 43 | 212 70 | 789 91 | |
| 3 | 32 | 14114 50 | 2324 31 | 829 00 | 542 32 | |
| 4 | 25 | 34010 00 | 823 74 | 511 75 | 500 27 | |
| 3 | 11 | 11805 00 | 823 64 | 183 66 | 133 30 | |
| 6 | 2 | 1830 00 | ..... | ..... ..... | 146 00 | |
| 2 | 5 | 9335 00 | 442 70 | ..... | 311 30 | |
| 1 | 3 | 3600 00 | 270 07 | .... ..... | 67 00 | |
| 3 | 14 | 13653 15 | 960 36 | 416 18 | 269 80 | |
| 1 | 3 | ..... | 251 52 | .. ..... | 45 59 | |
| 11 | 26 | 12755 00 | 4334 51 | 877 61 | 775 30 | |
| 28 | 52 | 22625 00 | 4347 85 | 689 28 | 1647 13 | |
| ..... | 2 | 2000 00 | ..... | ..... | 69 30 | |
| 6 | 7 | 7716 00 | 368 44 | 171 71 | 163 50 | |
| 10 | 6 | ..... | 384 90 | 115 00 | 245 00 | |
| 3 | 6 | ..... | 1077 06 | ..... | 108 86 | |
| 10 | 10 | 15280 00 | 1944 73 | 616 15 | 1443 68 | |
| 27 | 45 | 58519 17 | 3656 49 | 3701 19 | 1101 50 | |
| 240 | 583 | 416914 84 | 52070 97 | 20041 24 | 21203 87 | |

APPENDIX C.—Being a Return of Business Transacted by Local Registrars, Deputy the year ending

| COUNTIES OR DISTRICTS. | NUMBER OF WRITS ISSUED IN THE | | NUMBER OF WRITS CA RE OR CA SA ISSUED. | | TOTAL AMOUNT ENDORSED ON SUCH WRITS. | | NUMBER OF ACTIONS ENTERED IN PROCEDURE BOOK. | |
|---|---|---|---|---|---|---|---|---|
| | Q. B. and C. P. Divs. | Chy. Div. | Q. B. and C. P. Divs. | Chy. Div. | Q. B. and C. P. Divs. | Chy. Div. | Q. B. and C. P. Divs. | Chy. Div. |
| | | | | | $ c. | $ c. | | |
| Algoma | 18 | 8 | ..... | ..... | 12684 30 | 17989 50 | 19 | 8 |
| Brant | 53 | 27 | ..... | ..... | 40784 25 | 29709 25 | 41 | 20 |
| Bruce | 69 | 35 | 3 | ..... | 20525 04 | 21813 69 | 42 | 27 |
| Carleton | 205 | 103 | ..... | ..... | 686995 52 | 249399 95 | 153 | 96 |
| Dufferin | 41 | 20 | ..... | ..... | 28316 20 | 12150 24 | 34 | 18 |
| Elgin | 97 | 48 | 2 | ..... | 26752 15 | 47123 30 | 62 | 37 |
| Essex | 100 | 50 | ..... | ..... | 65634 00 | 78719 76 | 87 | 62 |
| Frontenac | 150 | 74 | ..... | ..... | 214032 25 | 75017 65 | 102 | 52 |
| Grey | 50 | 25 | 1 | ..... | 63760 13 | 31215 84 | 43 | 19 |
| Haldimand | 26 | 12 | ..... | ..... | 13120 19 | 5181 27 | 18 | 8 |
| Halton | 13 | 6 | ..... | ..... | 11931 13 | 5985 95 | 10 | 6 |
| Hastings | 140 | 70 | ..... | ..... | 177390 31 | 59100 20 | 105 | 68 |
| Huron | 82 | 42 | 1 | ..... | 77543 80 | 29310 25 | 71 | 24 |
| Kent | 79 | 39 | 1 | ..... | 29499 80 | 38344 81 | 70 | 50 |
| Lambton | 58 | 28 | ..... | ..... | 30240 30 | 16732 89 | 54 | 24 |
| Lanark | 78 | 39 | ..... | ..... | 62617 09 | 36450 19 | 50 | 21 |
| Leeds and Grenville | 58 | 28 | 1 | ..... | 53009 76 | 23137 75 | 51 | 17 |
| Lennox and Addington | 35 | 17 | ..... | ..... | 24625 10 | 9446 35 | 29 | 21 |
| Lincoln | 75 | 37 | ..... | ..... | 187203 12 | 77308 38 | 54 | 37 |
| Middlesex | 246 | 123 | 1 | ..... | 171526 28 | 73185 67 | 180 | 98 |
| Muskoka | 9 | 5 | ..... | ..... | 4269 30 | 1896 00 | 3 | 5 |
| Norfolk | 28 | 13 | ..... | ..... | 23748 95 | 6967 29 | 14 | 7 |
| Northumberland and Durham | 79 | 39 | ..... | ..... | 117734 00 | 56641 00 | 35 | 26 |
| Ontario | 67 | 34 | ..... | ..... | 88356 24 | 57348 30 | 43 | 25 |
| Oxford | 91 | 45 | ..... | ..... | 120194 57 | 43254 40 | 67 | 45 |
| Parry Sound | 6 | 3 | ..... | ..... | 5510 62 | 281 70 | 2 | 3 |
| Peel | 33 | 17 | ..... | ..... | 83735 74 | 25009 65 | 20 | 7 |
| Perth | 90 | 45 | ..... | ..... | 211566 03 | 58300 74 | 66 | 42 |
| Peterboro' | 90 | 45 | ..... | ..... | 105438 98 | 41510 50 | 58 | 31 |
| Prescott and Russell | 17 | 9 | ..... | ..... | 9826 73 | 6175 58 | 13 | 8 |
| Prince Edward | 47 | 23 | ..... | ..... | 59965 38 | 25479 27 | 32 | 20 |
| Renfrew | 53 | 27 | ..... | ..... | 28108 13 | 31903 41 | 37 | 24 |
| Simcoe | 128 | 63 | ..... | ..... | 127985 39 | 93921 52 | 96 | 44 |
| Stormont, Dundas and Glengarry | 126 | 66 | ..... | ..... | 182278 45 | 122433 78 | 80 | 43 |
| Thunder Bay | 24 | 12 | ..... | ..... | 54563 45 | 11474 39 | 21 | 13 |
| Victoria | 43 | 21 | ..... | ..... | 50463 84 | 14848 76 | 25 | 17 |
| Waterloo | 67 | 34 | ..... | ..... | 42445 61 | 19467 54 | 45 | 24 |
| Welland | 33 | 16 | ..... | ..... | 18720 22 | 10073 13 | 28 | 12 |
| Wellington | 89 | 44 | ..... | ..... | 60633 08 | 28024 78 | 68 | 29 |
| Wentworth | 196 | 98 | ..... | ..... | 247115 99 | 128885 65 | 164 | 87 |
| York | 1641 | 820 | 3 | 6 | 2656832 09 | 1269832 65 | 974 | 505 |
| Totals | 4630 | 2310 | 13 | 6 | 6297623 51 | 2991032 93 | 3166 | 1730 |

Registrars and Deputy Clerks of the Crown throughout the Province of Ontario during 31st December, 1890.

| Number of Lispendens Issued. | | Number of Præcipe Orders Issued. | | Number of Orders Issued and Signed by Local Judge | | Number of Examination of Parties. | | Number of Actions Entered for Trial. | | | | Number of Judgments Entered without Trial. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | (1) By Jury. | | (2) Without Jury. | | | |
| Q. B. and C. P. Divs. | Chy. Div. | Q. B. and C. P. Divs. | Chy. Div. | Q. B. and C. P. Divs. | Chy. Div. | Q. B. and C. P. Divs. | Chy. Div. | Q. B. and C. P. Divs. | Chy. Div. | Q. B. and C. P. Divs. | Chy. Div. | Q. B. and C. P. Divs. | Chy. Div. |
| ..... | 1 | 1 | ..... | 14 | 9 | 5 | 1 | 1 | 1 | 6 | ..... | 11 | 4 |
| 2 | 3 | 23 | 8 | 16 | 11 | 30 | 20 | 7 | 4 | 10 | 3 | 13 | 7 |
| 14 | 9 | 9 | 15 | 21 | 8 | 10 | 6 | 4 | ..... | 4 | 13 | 22 | 10 |
| 6 | 8 | 79 | 45 | 81 | 2 | 59 | 33 | 28 | ..... | 25 | 5 | 60 | 31 |
| 8 | 5 | 17 | 7 | 28 | 13 | 22 | 6 | 12 | 4 | 5 | 4 | 5 | 4 |
| 10 | 2 | 34 | 19 | 40 | 23 | 20 | 15 | 12 | 4 | 8 | 4 | 13 | 9 |
| 4 | 5 | 25 | 24 | 14 | 11 | 22 | 4 | 13 | 9 | 10 | 8 | 14 | 21 |
| 4 | 9 | 35 | 24 | 42 | 3 | 13 | 39 | 10 | 5 | 2 | 20 | 44 | 20 |
| 15 | 3 | 25 | 12 | 11 | 5 | 18 | 9 | 8 | 2 | 7 | 5 | 16 | 5 |
| 5 | 3 | 8 | 3 | 9 | 3 | 2 | 3 | ..... | 1 | 4 | 3 | 5 | 1 |
| 1 | ..... | 6 | ..... | 8 | 2 | ..... | ..... | 2 | ..... | 2 | 1 | 4 | ..... |
| 11 | 8 | 69 | 58 | 25 | ..... | 33 | .. .... | 10 | 4 | 16 | 22 | 34 | 22 |
| 15 | 1 | 42 | 9 | 45 | ..... | 36 | 6 | 12 | 5 | 6 | 15 | 20 | 4 |
| 3 | ..... | 19 | 28 | 11 | ..... | 10 | 12 | 5 | ..... | 12 | 17 | 16 | 11 |
| 9 | 2 | 17 | 5 | 12 | 4 | 18 | 6 | 6 | 2 | 4 | 1 | 13 | 10 |
| 9 | 5 | 21 | 7 | 30 | 13 | 21 | 7 | 6 | 2 | 5 | 1 | 13 | 6 |
| 7 | 2 | 19 | 9 | 9 | 9 | 22 | 7 | 9 | ..... | 6 | 10 | 19 | 6 |
| 2 | 1 | 18 | 15 | 8 | 4 | 14 | 5 | 9 | 2 | ..... | 2 | 15 | 9 |
| 4 | 4 | 30 | 30 | 30 | 29 | 21 | 6 | 8 | 3 | 6 | 12 | 17 | 4 |
| 23 | 14 | 80 | 36 | 106 | 16 | 43 | 30 | 20 | 8 | 15 | 19 | 84 | 36 |
| ..... | ..... | 2 | 2 | 4 | ..... | ..... | ..... | ..... | 3 | ..... | ..... | 3 | 4 |
| 5 | 2 | 2 | 2 | 4 | 3 | 1 | 2 | ..... | ..... | 1 | ..... | 5 | 4 |
| 4 | 4 | 14 | 14 | 16 | 18 | 13 | 9 | 2 | ..... | 4 | 2 | 27 | 14 |
| 5 | 2 | 18 | 3 | 12 | 7 | 10 | 4 | 13 | 2 | 4 | 5 | 19 | 12 |
| 9 | 6 | 25 | 11 | 28 | 4 | 20 | 11 | 8 | 6 | 3 | 7 | 20 | 7 |
| ..... | ..... | .... | ..... | ..... | ..... | 1 | 2 | ..... | 1 | 2 | 1 | 1 | ..... |
| 1 | 2 | 3 | 2 | 15 | 7 | 8 | 3 | ..... | 1 | 3 | 2 | 17 | 2 |
| 11 | 8 | 37 | 30 | 28 | 17 | 41 | 29 | 14 | 6 | 7 | 15 | 26 | 12 |
| 7 | 7 | 34 | 13 | 9 | 11 | 23 | 20 | 6 | 3 | 5 | 4 | 25 | 14 |
| 2 | ..... | 4 | 1 | 8 | 6 | 1 | 3 | .. ... | ..... | 1 | 1 | 9 | 4 |
| 1 | 3 | 16 | 16 | 14 | 5 | 3 | 3 | 6 | 2 | 6 | 4 | 18 | 5 |
| ..... | ..... | 4 | 2 | 13 | 10 | 4 | ..... | 3 | 1 | 4 | 1 | 25 | 12 |
| 15 | 8 | 60 | 18 | 14 | 64 | 57 | 23 | 12 | 8 | 14 | 33 | 32 | 27 |
| 2 | 3 | 32 | 32 | 16 | 6 | 2 | 1 | 6 | 9 | 8 | 6 | 40 | 20 |
| 4 | 5 | 27 | 4 | 27 | 24 | 16 | 6 | 5 | 4 | 6 | 1 | 6 | 4 |
| ..... | 1 | 7 | 2 | ..... | ..... | 19 | 7 | 7 | 4 | 3 | 4 | 9 | 12 |
| 9 | 4 | 7 | 8 | ..... | ..... | 11 | 6 | 4 | 5 | 3 | 4 | 20 | 6 |
| 4 | 3 | 23 | 8 | 12 | 5 | 22 | 4 | 7 | 1 | 5 | 2 | 11 | ..... |
| 15 | 7 | 19 | 12 | 26 | ..... | 16 | 4 | 6 | 1 | 9 | 11 | 12 | 13 |
| 25 | 12 | 70 | 63 | 63 | 43 | 45 | 21 | 46 | 15 | 32 | 15 | 61 | 24 |
| 196 | 97 | 719 | 337 | ..... | ..... | 403 | 300 | 128 | 52 | 159 | 81 | ..... | ..... |
| 467 | 259 | 1700 | 934 | 869 | 395 | 1135 | 673 | 455 | 180 | 432 | 364 | 824 | 416 |

APPENDIX C.—Being a Return of Business Transacted by Local Registrars, Deputy the year ending

| COUNTIES OR DISTRICTS. | TOTAL AMOUNT OF SUCH JUDGMENTS WITHOUT COSTS. | | TOTAL AMOUNT OF COSTS TAXED THEREUNDER. | | TOTAL AMOUNT OF DISBURSEMENTS ALLOWED THEREUNDER. | |
|---|---|---|---|---|---|---|
| | Q. B. and C. P. Div. | Chy. Div. | Q. B. and C.P. Divs. | Chy. Div. | Q. B. and C.P.'Divs. | Chy. Div. |
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Algoma | 7242 75 | 1237 32 | 450 72 | 137 73 | 142 44 | 42 03 |
| Brant | 13053 42 | 10533 63 | 343 69 | 163 20 | 100 19 | 41 50 |
| Bruce | 15872 26 | 7134 72 | 1810 80 | 766 11 | 373 93 | 379 04 |
| Carleton | 36403 77 | 19117 80 | 1495 51 | 752 87 | 454 83 | 403 73 |
| Dufferin | 3055 03 | 1203 46 | 141 25 | 76 70 | 52 86 | 45 21 |
| Elgin | 12995 13 | 7889 31 | 278 14 | 171 87 | 79 77 | 51 81 |
| Essex | 21441 00 | 12585 25 | 854 00 | 837 93 | 333 00 | 318 00 |
| Frontenac | 32337 31 | 14081 37 | 752 63 | 623 82 | 286 91 | ..... |
| Grey | 34176 41 | 15350 71 | 373 45 | 128 05 | 101 95 | 41 52 |
| Haldimand | 1425 00 | 75 00 | 84 86 | 26 52 | 9 59 | 8 22 |
| Halton | 3038 54 | ..... | 85 30 | ..... | 35 98 | ..... |
| Hastings | 61266 70 | 26272 15 | 1365 21 | 697 36 | 4017 00 | 206 74 |
| Huron | 8347 24 | 5714 00 | 622 24 | 119 80 | 324 50 | 21 04 |
| Kent | 23039 97 | 5325 44 | 547 24 | 184 59 | 113 30 | 61 53 |
| Lambton | 5714 89 | 2876 53 | 325 67 | 203 96 | 91 70 | 64 66 |
| Lanark | 17233 49 | 5267 89 | 520 60 | 211 32 | 159 83 | 67 56 |
| Leeds and Grenville | 19172 49 | 3135 62 | 557 87 | 138 21 | 138 65 | 34 25 |
| Lennox and Addington | 7718 51 | 2371 52 | 1234 13 | 124 08 | 356 58 | 42 48 |
| Lincoln | 37848 47 | 1775 29 | 536 81 | 106 29 | 177 06 | 32 26 |
| Middlesex | 90695 58 | 31023 90 | 2273 26 | 600 83 | 599 04 | 241 14 |
| Muskoka | 522 45 | 367 49 | 20 82 | 35 75 | 5 42 | 5 29 |
| Norfolk | 10666 90 | 3033 02 | 139 35 | 154 26 | 44 99 | 48 80 |
| Northumberland and Durham | 48032 00 | 4626 00 | 907 00 | 416 00 | 229 00 | 119 00 |
| Ontario | 14938 90 | 6865 77 | 374 46 | 179 88 | 137 80 | 66 83 |
| Oxford | 30334 58 | 4425 74 | 693 63 | 164 35 | 228 58 | 47 03 |
| Parry Sound | ..... | ..... | ..... | ..... | ..... | ..... |
| Peel | 33966 11 | 5112 60 | 451 44 | 143 37 | 120 60 | 49 54 |
| Perth | 115408 86 | 7105 68 | 538 82 | 193 24 | 153 50 | 51 69 |
| Peterboro' | 8719 16 | 8804 51 | 607 96 | 308 09 | 166 92 | 96 63 |
| Prescott and Russell | 3195 79 | 956 44 | 758 93 | 549 72 | 431 52 | 341 04 |
| Prince Edward | 20139 71 | 4796 83 | 1420 23 | 138 45 | 517 84 | 42 25 |
| Renfrew | 33279 02 | 7503 45 | 761 90 | 307 64 | 227 21 | 110 41 |
| Simcoe | 27619 02 | 13912 91 | 994 45 | 509 14 | 308 65 | 152 64 |
| Stormont, Dundas and Glengarry | 26086 89 | 31990 55 | 1069 31 | 361 68 | 237 35 | 99 94 |
| Thunder Bay | 2797 69 | 2823 02 | 214 32 | 89 98 | 63 85 | 27 68 |
| Victoria | 18247 32 | 4279 00 | 372 80 | 213 53 | 208 96 | 70 03 |
| Waterloo | 17233 79 | 3549 22 | 354 18 | 155 84 | 97 26 | 42 80 |
| Welland | 6411 50 | ..... | 192 50 | ..... | 75 32 | ..... |
| Wellington | 14079 95 | 1660 65 | 512 28 | 321 21 | 91 52 | 161 26 |
| Wentworth | 45529 03 | 21612 64 | 1810 75 | 663 65 | 529 23 | 212 65 |
| York | ..... | ..... | ..... | ..... | ..... | ..... |
| Totals | 929206 63 | 306396 43 | 26848 51 | 10886 46 | 11824 63 | 3848 33 |

Registrars and Deputy Clerks of the Crown throughout the Province of Ontario during 31st December, 1890.—*Continued.*

| Number of Judgments entered after trial. | | Total Amount of such Judgments without Costs. | | Amount of Costs Taxed thereunder. | | Amount of Disbursements allowed thereunder. | | Number of Judgments for | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q. B. and C. P. Divs. | Chy. Div. | Q. B. and C. P. Divs. | Chy. Div. | Q. B. and C. P. Divs. | Chy. Div. | Q. B. and C. P. Divs. | Chy. Div. | Over $10,000. | $10,000 and above $5,000. | $5,000 and above $2,000. | $2,000 and above $1,000. | $1,000 and above $500. | $500 and under. |
| | | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | | | | | | |
| 1 | ..... | 100 00 | ..... | 178 99 | ..... | 124 89 | ..... | .... | ..... | 1 | 1 | 4 | 7 |
| 9 | 3 | 1780 38 | 349 90 | 315 56 | 488 97 | 120 71 | 213 57 | .... | 2 | 4 | 8 | 4 | 14 |
| 1 | 3 | 280 24 | 175 00 | 109 55 | 562 20 | 47 85 | 407 55 | .... | ..... | 3 | 6 | 5 | 3 |
| 25 | 8 | 8321 12 | 509 00 | 3089 53 | 823 23 | 1597 47 | 216 21 | .... | 1 | 5 | 8 | 34 | 37 |
| 3 | ..... | 150 50 | ..... | 318 05 | ..... | 379 50 | ..... | .... | ..... | ..... | 2 | 3 | 7 |
| 14 | 3 | ..... | ..... | 896 71 | ..... | 182 96 | ..... | .... | 1 | ..... | 5 | 10 | 1 |
| 12 | 11 | 2184 00 | 657 62 | 757 00 | 921 00 | 179 00 | 544 38 | .... | 2 | 2 | 4 | 12 | 20 |
| 10 | 11 | 10597 30 | 2284 48 | 1646 86 | 1120 96 | 841 00 | ..... | .... | 2 | 14 | 16 | 17 | 17 |
| 7 | 2 | 1231 84 | 525 00 | 1389 06 | 593 38 | 556 74 | 237 59 | 1 | 4 | 2 | 2 | 3 | 18 |
| 3 | 2 | 300 00 | 2402 76 | 136 42 | 394 00 | 57 38 | 194 00 | .... | ..... | ..... | 2 | ..... | 3 |
| 2 | 2 | 1300 75 | 2630 90 | 219 28 | 64 65 | 227 40 | 60 25 | .... | ..... | 1 | 3 | ..... | 3 |
| 22 | 12 | 2820 89 | 2849 71 | 2792 07 | 1036 91 | 775 02 | 479 66 | 8 | 1 | 12 | 15 | 14 | 26 |
| 9 | 2 | 1212 77 | 2320 83 | 2254 49 | 363 81 | 883 91 | 77 80 | .... | ..... | 2 | 2 | 10 | 21 |
| 7 | 4 | 500 00 | ..... | 1090 40 | 470 18 | 660 20 | 242 23 | .... | 2 | 1 | 3 | 11 | 7 |
| 1 | ..... | ..... | ..... | 274 85 | ..... | 123 04 | ..... | .... | ..... | 1 | ..... | 10 | 3 |
| 5 | ..... | 2697 88 | ..... | 995 04 | ..... | 500 45 | ..... | .... | ..... | 4 | 4 | 15 | 11 |
| 4 | 4 | 516 00 | 1472 10 | 730 85 | 833 85 | 358 10 | 268 37 | .... | ..... | 3 | 7 | 5 | 14 |
| 4 | 3 | 144 50 | 150 00 | 1001 39 | 414 36 | 308 78 | 131 22 | .... | ..... | 1 | ..... | 7 | 23 |
| 2 | 8 | 316 35 | 7700 48 | 233 79 | 2103 61 | 116 08 | 901 05 | 1 | ..... | 4 | 3 | 8 | 11 |
| 6 | 8 | 488 65 | 343 00 | 1702 40 | 206 19 | 426 27 | 454 30 | 2 | 1 | 6 | 13 | 34 | 56 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .... | ..... | ..... | ..... | 1 | 1 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .... | 1 | 1 | 1 | 5 | 1 |
| 8 | 1 | 1165 00 | ..... | 607 00 | ..... | 401 00 | ..... | 2 | ..... | 2 | 4 | 11 | 10 |
| 4 | 1 | 450 00 | ..... | 72 86 | ..... | 108 56 | ..... | .... | 1 | 3 | 2 | 6 | 24 |
| 6 | 3 | 1862 16 | 500 00 | 1122 36 | 165 35 | 544 16 | 95 65 | 1 | 1 | ..... | 9 | 11 | 10 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1 | ..... | 160 00 | ..... | 139 31 | ..... | 105 20 | ..... | 1 | 2 | 2 | 3 | 2 | 4 |
| 8 | 8 | 2317 13 | 2535 23 | 1814 52 | 1193 02 | 1351 06 | 657 71 | 1 | 2 | 7 | 5 | 9 | 13 |
| 7 | 1 | 2836 06 | ..... | 1067 09 | 429 88 | 388 84 | 201 22 | .... | ..... | 3 | 2 | 7 | 17 |
| 2 | 1 | ..... | 596 80 | 209 90 | 440 63 | 151 68 | 307 25 | .... | ..... | ..... | 1 | 2 | 13 |
| 2 | 1 | 615 30 | ..... | 530 74 | 242 43 | 254 42 | 131 73 | 1 | ..... | 4 | 3 | 7 | 11 |
| 3 | 1 | 3712 21 | 500 00 | 1053 43 | ..... | 752 68 | ..... | .... | 1 | 6 | 5 | 12 | 12 |
| 26 | 6 | 34937 41 | 2368 45 | 4702 24 | 1340 39 | 3180 44 | 499 56 | 1 | 2 | 2 | 8 | 25 | 25 |
| 13 | 8 | 3065 72 | 210 00 | 1584 03 | 2312 76 | 746 39 | 897 94 | 1 | ..... | 5 | 1 | 15 | 59 |
| 4 | 1 | 2112 44 | 1308 20 | 667 47 | 210 08 | 415 37 | 93 93 | .... | ..... | ..... | 6 | 4 | 3 |
| 3 | 1 | 130 05 | 50 00 | 814 03 | 365 49 | 420 14 | 215 24 | .... | 1 | 1 | 2 | 6 | 15 |
| 2 | 2 | 400 00 | ..... | 419 36 | ..... | 154 61 | ..... | .... | 2 | ..... | 1 | 7 | 6 |
| 7 | ..... | 32 00 | ..... | 732 24 | ..... | 437 82 | ..... | .... | ..... | ..... | 2 | 5 | 11 |
| 2 | 3 | 19 50 | 544 00 | 396 96 | 495 52 | 210 81 | 262 27 | .... | 1 | ..... | ..... | 13 | 7 |
| 24 | 13 | 13766 93 | 5029 28 | 5517 37 | 2109 60 | 2883 32 | 1063 37 | .... | 2 | 7 | 12 | 28 | 60 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .... | ..... | ..... | ..... | ..... | ..... |
| 269 | 137 | 103815 08 | 38012 74 | 41583 20 | 19702 45 | 20973 25 | 8854 05 | 20 | 32 | 109 | 171 | 382 | 594 |

APPENDIX C.—Being a Return of Business transacted by Local Registrars, Deputy the year ending

| COUNTIES OR DISTRICTS. | NUMBER OF DAYS OF SITTING OF JUDGE AT TRIALS. | | AMOUNT OF MONEY PAID INTO COURT WITH DEFENCE. | | AMOUNT OF SAME PAID OUT OF COURT. | | BALANCES OF MONEY REMAINING IN COURT. | |
|---|---|---|---|---|---|---|---|---|
| | Q. B. and C. P. Divs. | Chy. Div. | Q. B. and C. P. Divs. | Chy. Div. | Q. B. and C. P. Divs. | Chy. Div. | Q. B. and C. P. Divs. | Chy. Div. |
| | | | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Algoma | 4 | | | | | | 274 75 | |
| Brant | 11 | 1 | 274 75 | | | | | |
| Bruce | 9 | 6 | | | | | | |
| Carleton | 19 | 5 | | | | | | |
| Dufferin | 8 | | 77 40 | | 77 40 | | | |
| Elgin | 10 | 4 | 50 00 | | 50 00 | | | |
| Essex | 9 | 5 | | | | | | |
| Frontenac | 9 | 6 | | | | | | |
| Grey | 8 | 3 | | | | | | |
| Haldimand | 5 | | | | | | | |
| Halton | 3 | | | | | | | |
| Hastings | 13 | 5 | 429 49 | | | | 429 49 | |
| Huron | 8 | 3 | 554 00 | | | | 554 00 | |
| Kent | 17 | 9 | | | | | | |
| Lambton | 6 | 3 | | | | | | |
| Lanark | 7 | | | 623 70 | | | | 623 70 |
| Leeds and Grenville | 7 | 4 | | | | | | |
| Lennox and Addington | 4 | | 35 00 | 35 00 | 35 00 | 20 00 | | 15 00 |
| Lincoln | 5 | 2 | 201 00 | 13940 80 | | | 201 00 | 13940 80 |
| Middlesex | 29 | 6 | 194 40 | | | | 194 40 | |
| Muskoka | 2 | | | | | | | |
| Norfolk | 2 | 2 | | | | | | |
| Northumberland and Durham | 7 | 2 | | | | | | |
| Ontario | 7 | 3 | | | | | | |
| Oxford | 15 | 5 | | | | | 9 50 | |
| Parry Sound | | | | | | | | |
| Peel | 4 | | | | | | | |
| Perth | 10 | 6 | | | | | | |
| Peterboro' | 10 | 3 | 188 93 | 5 00 | 188 93 | 5 00 | | |
| Prescott and Russell | 8 | | 163 16 | | 163 16 | | | |
| Prince Edward | 7 | | | | | | | |
| Renfrew | 4 | | | | | | | |
| Simcoe | 16 | 7 | | | | | | |
| Stormont, Dundas and Glengarry | 5 | 2 | | | | | | |
| Thunder Bay | 6 | | 50 00 | | | | 50 00 | |
| Victoria | 14 | 2 | | | | | | |
| Waterloo | 6 | | | | | | | |
| Welland | 7 | | | | | | | |
| Wellington | 11 | 4 | | | | | | |
| Wentworth | 46 | 10 | 859 50 | 675 00 | | | 859 50 | 675 00 |
| York | 211 | 42 | | | | | | |
| Totals | 589 | 150 | 3077 63 | 15279 50 | 514 49 | 25 00 | 2572 64 | 15254 50 |

Registrars and Deputy Clerks of the Crown throughout the Province of Ontario during 31st December 1890.—*Continued.*

| Number of Writs of Execution issued against Goods. | | Number of Writs of Execution against Lands. | | Amount of Fees collected in law Stamps by Deputy Clerks. | Amount of Fees collected in law stamps by Deputy Registrars. | Amount of salary paid Deputy Clerk of the Crown. | Amount of salary paid Local Registrar as Deputy Registrar in Chancery. | Amount of Fees Earned by Deputy-Clerks or Local Registrars and payable in cash. | Amount of Fees Earned by Deputy-Registrars. | Total amount of Salaries Paid and Fees Earned by Deputy-Clerks and Deputy-Registrars. |
|---|---|---|---|---|---|---|---|---|---|---|
| Q. B. and C. P. Divs. | Chy. Div. | Q. B. and C. P. Divs. | Chy. Div. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 5 | 1 | 5 | 1 | 129 60 | ..... | ..... | 150 00 | 52 00 | ..... | 202 00 |
| 29 | 12 | 25 | 9 | 410 60 | ..... | 450 00 | 225 00 | 722 45 | ..... | 1397 45 |
| 11 | 9 | 6 | 7 | 527 85 | 193 40 | 450 00 | ..... | 180 86 | 193 40 | 824 26 |
| 47 | 28 | 39 | 26 | 1690 13 | ..... | 450 00 | ..... | 558 53 | 585 34 | 1593 87 |
| 4 | ..... | 5 | ..... | 310 70 | ..... | 450 00 | 225 00 | 284 70 | ..... | 959 70 |
| 12 | 7 | 8 | 4 | 635 10 | ..... | 450 00 | 225 00 | 323 70 | ..... | 998 70 |
| 17 | 12 | 13 | 7 | 293 00 | ..... | 450 00 | ..... | 498 00 | 249 00 | 1197 00 |
| 39 | 12 | 34 | 7 | 679 20 | ..... | 450 00 | ..... | 158 90 | 321 00 | 929 90 |
| 16 | 7 | 15 | 7 | 489 00 | ..... | 500 00 | 250 00 | 164 30 | ..... | 914 30 |
| 2 | ..... | ..... | ..... | 169 95 | ..... | 400 00 | 200 00 | 89 70 | ..... | 689 70 |
| 10 | 3 | 8 | ..... | 116 40 | ..... | 400 00 | 200 00 | 30 55 | ..... | 630 55 |
| 33 | 22 | 21 | 15 | 739 70 | 484 70 | 450 00 | ..... | 773 33 | 484 70 | 1708 03 |
| 20 | 6 | 15 | 6 | 569 80 | 126 50 | 500 00 | ..... | 957 10 | 126 50 | 1583 60 |
| 16 | 12 | 17 | 12 | 426 10 | 208 40 | 450 00 | ..... | 129 00 | 208 40 | 787 40 |
| 6 | 3 | 6 | 3 | 384 50 | ..... | 450 00 | 225 00 | 189 50 | ..... | 864 50 |
| 11 | 1 | 9 | 1 | 530 44 | ..... | 450 00 | 225 00 | 232 25 | ..... | 907 25 |
| 16 | 6 | 9 | 4 | 329 40 | ..... | 500 00 | ..... | 316 18 | 128 65 | 944 83 |
| 12 | 4 | 10 | 2 | 367 60 | ..... | 400 00 | 200 00 | 253 60 | ..... | 853 60 |
| 12 | 3 | 9 | 2 | 427 50 | ..... | 450 00 | ..... | 255 06 | 306 30 | 1011 36 |
| 65 | 31 | 68 | 23 | 1432 30 | ..... | 500 00 | ..... | 504 70 | 524 55 | 1529 25 |
| 1 | ..... | 1 | 1 | 65 20 | ..... | 300 00 | ..... | 54 28 | ..... | 554 28 |
| 3 | 8 | 2 | 5 | 162 90 | ..... | 450 00 | 225 00 | 27 30 | ..... | 702 30 |
| 16 | 6 | 12 | 3 | 530 10 | ..... | 500 00 | 250 00 | 297 40 | ..... | 1047 40 |
| 7 | 5 | 13 | 4 | 381 80 | ..... | 450 00 | 225 00 | 140 40 | ..... | 815 40 |
| 25 | 11 | 20 | 6 | 513 40 | ..... | 450 00 | ..... | 436 00 | 344 12 | 1230 12 |
| ..... | ..... | ..... | ..... | 34 20 | ..... | 600 00 | ..... | 67 00 | ..... | 667 00 |
| 6 | 2 | 3 | 2 | 262 20 | ..... | 400 00 | 200 00 | 134 05 | ..... | 734 05 |
| 16 | 7 | 13 | 6 | 767 50 | ..... | 450 00 | 225 00 | 1029 00 | ..... | 1724 00 |
| 10 | 8 | 8 | 7 | 557 30 | ..... | 450 00 | 225 00 | 365 05 | ..... | 1040 05 |
| 5 | 5 | 3 | 3 | 143 20 | ..... | 450 00 | 225 00 | 77 00 | ..... | 752 00 |
| 7 | 5 | 6 | 6 | 404 90 | ..... | 400 00 | 200 00 | 156 83 | ..... | 756 83 |
| 13 | 9 | 2 | 2 | 243 10 | ..... | 400 00 | 200 00 | 48 00 | ..... | 648 00 |
| 28 | 21 | 30 | 19 | 727 90 | ..... | 500 00 | ..... | 598 18 | 707 65 | 1805 83 |
| 30 | 10 | 27 | 11 | 790 80 | ..... | 500 00 | 250 00 | 59 80 | ..... | 809 80 |
| 8 | 3 | 7 | 3 | 110 60 | ..... | 400 00 | 200 00 | 45 85 | ..... | 645 85 |
| 13 | 4 | 12 | 3 | 284 90 | ..... | 450 00 | 225 00 | 327 00 | ..... | 1002 00 |
| 11 | 9 | 8 | 2 | 371 00 | ..... | 850 00 | 225 00 | 229 00 | ..... | 1304 00 |
| 21 | 1 | 15 | ..... | 414 20 | ..... | 800 00 | 200 00 | 244 40 | ..... | 1244 40 |
| 19 | 7 | 9 | 6 | 439 90 | ..... | 500 00 | ..... | 95 15 | 234 11 | 829 26 |
| 44 | 32 | 32 | 24 | 1278 15 | 653 05 | 500 00 | ..... | 559 33 | 653 05 | 1712 38 |
| 506 | 245 | 409 | 224 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 11722 | 577 | 954 | 473 | 19042 12 | 1666 05 | 18400 00 | 5200 00 | 11645 43 | 5066 77 | 40552 20 |

APPENDIX D.—Being a Return of Business Transacted by County Court Clerks

| COUNTIES OR DISTRICTS. | Number of Writs of Summons issued. | Number of Writs of *Ca. Re.* issued. | Total amounts indorsed on Writs of Summons and *Ca. Re.* | Number of actions entered in Procedure Book. | Number of lispendens issued. | Number of precipe orders issued. | Number of orders issued and signed by Local Judge. | Number of Examinations of Parties. | Number of Actions entered for Trial. | | Number of Judgments entered without trial. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | (*a*) By Jury. | (*b*) Without Jury. | |
| | | | $ c. | | | | | | | | |
| Algoma | 36 | .... | 9250 39 | 28 | .... | 3 | 19 | 3 | 4 | 4 | 19 |
| Brant | 55 | .... | 9340 24 | 76 | 3 | 8 | 40 | 10 | 7 | ..... | 18 |
| Bruce | 47 | .... | 6901 34 | 35 | .... | 14 | 59 | 10 | 4 | 3 | 16 |
| Carleton | 137 | .... | 27642 67 | 113 | .... | 22 | 48 | 14 | 5 | 5 | 66 |
| Dufferin | 28 | .... | 4789 13 | 28 | .... | 4 | 28 | 4 | 4 | 1 | 4 |
| Elgin | 78 | .... | 15007 28 | 54 | .... | 6 | 31 | 8 | 5 | 4 | 36 |
| Essex | 61 | 1 | ..... ..... | .... | 2 | 10 | .... | 9 | 4 | 3 | 34 |
| Frontenac | 75 | .... | 13900 00 | 51 | .... | 17 | 30 | 19 | 5 | 3 | 35 |
| Grey | 39 | 4 | 7804 76 | 35 | .... | 9 | 7 | 8 | 10 | 4 | 19 |
| Haldimand | 9 | .... | 979 32 | .... | .... | .... | 2 | 3 | 1 | ..... | 5 |
| Halton | 16 | .... | 3320 39 | 14 | .... | 5 | 13 | .... | 2 | | 7 |
| Hastings | 120 | .... | 27696 56 | 94 | .... | 39 | 16 | 24 | 18 | 13 | 50 |
| Huron | 87 | 4 | 13987 50 | 72 | 3 | 17 | 59 | 22 | 4 | 3 | 35 |
| Kent | 76 | .... | 14889 19 | 63 | 2 | 16 | 24 | 5 | 3 | 5 | 52 |
| Lambton | 50 | .... | 10731 33 | 47 | .... | 6 | 14 | 9 | 7 | 2 | 26 |
| Lanark | 39 | .... | 6834 74 | 35 | .... | 8 | 43 | 10 | 5 | 2 | 17 |
| Leeds and Grenville | 57 | .... | 11576 20 | 38 | .... | 5 | 8 | 4 | 2 | 3 | 28 |
| Lennox and Addington | 22 | .... | 5256 05 | 18 | .... | 16 | 13 | 11 | 4 | 2 | 10 |
| Lincoln | 49 | .... | 8353 89 | 38 | .... | 12 | 40 | 17 | 5 | 2 | 18 |
| Manitoulin | 12 | .... | 2834 86 | 14 | .... | 5 | 1 | .... | ..... | ..... | 1 |
| Middlesex | 295 | 4 | 55082 00 | 211 | .... | 41 | 104 | 26 | 12 | 6 | 141 |
| Muskoka | 11 | .... | 1597 98 | 6 | .... | 2 | .... | .... | 1 | ..... | 6 |
| Norfolk | 19 | .... | 3427 15 | 17 | .... | .... | 18 | 1 | ... | 1 | 7 |
| Northumberland and Durham | 55 | .... | 7981 00 | .... | .... | 21 | 30 | 11 | 5 | 2 | 57 |
| Ontario | 60 | .... | 12716 61 | 41 | .... | 6 | 16 | 6 | 1 | 4 | 21 |
| Oxford | 70 | .... | 14755 70 | 56 | .... | 11 | 36 | 7 | 7 | 5 | 28 |
| Parry Sound | 6 | .... | 542 13 | 4 | .... | .... | .... | 1 | ..... | 1 | 2 |
| Peel | 18 | .... | 4179 52 | 23 | .... | 16 | 13 | 10 | 3 | 1 | 7 |
| Perth | 51 | .... | 10965 66 | 45 | .... | 8 | 23 | 15 | 3 | .. .. | 31 |
| Peterboro' | 49 | .... | 8758 52 | 39 | .... | 5 | 25 | 14 | 6 | 2 | 29 |
| Prescott and Russell | 26 | .... | 3500 52 | 22 | .... | 8 | 30 | 2 | ..... | 2 | 16 |
| Prince Edward | 25 | .... | 4952 38 | 22 | .... | 9 | 31 | 9 | 3 | 2 | 14 |
| Rainy River | 3 | .... | 1761 45 | 3 | .... | .... | .... | .... | .... | ..... | 1 |
| Renfrew | 69 | .... | 13820 40 | 50 | .... | .... | 23 | 3 | ..... | ..... | 33 |
| Simcoe | 115 | .... | 24994 87 | 85 | .... | 30 | 17 | 22 | 20 | 6 | 40 |
| Stormont, Dundas and Glengarry | 165 | .... | 25542 48 | 90 | .... | 29 | 35 | 1 | 9 | 3 | 71 |
| Thunder Bay | 62 | .... | 27144 87 | 55 | .... | 31 | 48 | 6 | 10 | 1 | 31 |
| Victoria | 34 | .... | 6013 07 | 34 | .... | 3 | .... | 6 | 1 | 3 | 13 |
| Waterloo | 50 | .... | 7376 43 | 40 | .... | 5 | 6 | 6 | 5 | 2 | 30 |
| Welland | 36 | .... | 5356 94 | 27 | 1 | 2 | 21 | 4 | 2 | 1 | 18 |
| Wellington | 89 | .... | 16389 19 | 73 | 3 | 14 | 47 | 4 | 2 | 5 | 36 |
| Wentworth | 203 | .... | 40354 00 | 158 | 5 | 31 | 71 | 15 | 11 | 5 | 97 |
| York | 1137 | .... | 239408 56 | 835 | 28 | 132 | 504 | 108 | 58 | 67 | 578 |
| Totals | 3741 | 13 | 737717 27 | 2789 | 47 | 526 | 1593 | 467 | 258 | 178 | 1803 |

throughout the Province of Ontario, during the year ending 31st December 1890.

| (a) Total amount of such Judgments without costs. | (b) Total amount of costs taxed thereunder. | (c) Total amount of Disbursements allowed. | Number of Judgments entered after Trial. | (a) Total amount of such Judgments without costs. | (b) Total amount of Costs taxed thereunder. | (c) Total amount of Disbursements allowed. | No. of Transcripts of Judgments received from Division Courts. | Number of Judgments. Over $200. | $200 and over $100. | $100 and under. | Number of days of sitting of Judge at trials. | Amount of money paid into Court with defence. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | | $ c. | $ c. | $ c. | | | | | | $ c. |
| 4931 38 | 581 67 | 177 77 | 4 | 436 77 | 403 72 | 255 74 | 3 | 10 | 7 | 6 | 12 | 1191 00 |
| 4414 12 | 220 20 | 99 00 | 2 | 652 73 | 158 37 | 86 39 | 17 | 16 | 3 | 1 | 4 | 158 50 |
| 3244 70 | 570 20 | 336 61 | ..... | ..... | ..... | ..... | 31 | 11 | 2 | 3 | 7 | 16 31 |
| 13270 01 | 1287 90 | 390 10 | 9 | 899 77 | 689 00 | 354 44 | 23 | 39 | 22 | 13 | 10 | 478 34 |
| 966 80 | 42 30 | 24 80 | 1 | 137 75 | 71 95 | 32 65 | 28 | 4 | 1 | .. | 3 | ..... |
| 7972 69 | 570 94 | 218 66 | 4 | 216 32 | 106 18 | 33 60 | 8 | 21 | 14 | 5 | 5 | 35 00 |
| 7448 00 | 681 00 | ..... ..... | 5 | 152 00 | 638 00 | .. ..... | 31 | 23 | 7 | 4 | 8 | 10 00 |
| 7667 66 | 504 67 | 144 04 | 3 | 444 92 | 208 21 | 130 57 | 15 | 23 | 8 | 4 | 8 | ..... |
| 4112 85 | 366 24 | 114 91 | 7 | 1122 00 | 775 77 | 295 37 | 38 | 15 | 8 | 3 | 8 | ..... |
| 968 29 | 70 50 | 25 70 | ..... | ..... ..... | ..... ..... | ..... | 10 | 2 | 3 | .... | 1 | ..... |
| 1501 42 | 119 46 | 59 40 | ..... | ..... ..... | ..... | ..... | 6 | 5 | 2 | 2 | 2 | 46 68 |
| 13636 68 | 765 84 | 194 62 | 12 | 2137 54 | 1471 38 | 629 56 | 33 | 45 | 12 | 5 | 16 | ..... |
| 8316 81 | 889 63 | 321 90 | 2 | ..... ..... | 159 65 | 47 25 | 40 | 27 | 7 | 3 | 6 | ..... |
| 12116 94 | 972 19 | 436 80 | 2 | 303 00 | 361 10 | 218 60 | 34 | 32 | 18 | 4 | 8 | ..... |
| 6337 08 | 552 46 | 144 20 | 3 | 698 35 | 291 55 | 149 84 | 33 | 24 | 5 | .... | 7 | ..... |
| 3261 69 | 323 29 | 96 86 | .... | ..... | ..... . | ..... | 15 | 8 | 8 | 1 | 4 | ..... |
| 6772 90 | 689 69 | 194 09 | 2 | 327 20 | 172 16 | 82 41 | 18 | 19 | 10 | 1 | 4 | 100 00 |
| 2672 97 | 178 96 | 53 91 | 3 | ..... ..... | 403 41 | 145 46 | 8 | 8 | 2 | 3 | 11 | 300 00 |
| 3032 42 | 469 65 | 168 97 | 3 | 316 35 | 233 79 | 116 08 | 10 | 6 | 9 | 5 | 11 | 225 00 |
| 129 00 | 11 93 | 2 88 | 1 | ..... . | 149 16 | 59 27 | .... | .... | 1 | .... | 3 | ..... |
| 32491 17 | 3535 16 | 1073 45 | 8 | 1196 10 | 600 94 | 186 82 | 44 | 84 | 61 | 4 | 17 | 442 82 |
| 937 27 | 118 16 | 89 34 | 1 | 91 34 | 117 73 | 56 08 | 1 | 4 | ... | 2 | 4 | ..... |
| 2532 01 | 106 79 | 33 37 | ..... | ..... ..... | ..... . | ..... | 15 | 6 | 1 | .... | ... | ..... |
| 8606 00 | 536 00 | 30 00 | 6 | 770 00 | 189 00 | 52 00 | 35 | 18 | 25 | 20 | 2 | 181 00 |
| 5280 25 | 248 15 | 107 85 | 6 | 1047 90 | 219 94 | 269 13 | 13 | 22 | 2 | 3 | 7 | .... ... |
| 6751 41 | 491 49 | 135 98 | 4 | 163 00 | 313 72 | 104 39 | 13 | 26 | 5 | 1 | 6 | ..... |
| 372 62 | 12 82 | ..... | ..... | ..... ..... | ..... | ..... | 2 | 1 | 1 | .... | ... | ..... |
| 2009 14 | 173 73 | 51 65 | 3 | 141 00 | 239 17 | 101 38 | 11 | 6 | 3 | 1 | 6 | 235 00 |
| 5329 17 | 286 12 | 85 20 | 1 | 197 38 | 45 68 | 30 98 | 15 | 12 | 12 | 8 | 2 | 320 00 |
| 6371 92 | 490 40 | 162 94 | 2 | 25 00 | 117 42 | 56 67 | 34 | 22 | 18 | 24 | 5 | 70 40 |
| 2145 70 | 533 94 | 278 58 | 2 | 246 55 | 177 07 | 111 92 | 11 | 2 | 11 | 5 | 2 | 154 00 |
| 2612 34 | 357 12 | 117 67 | 2 | 125 63 | 200 57 | 122 65 | 11 | 6 | 6 | 3 | 5 | ..... |
| 439 00 | 19 41 | 3 81 | ..... | ..... | ..... | ..... | .... | 1 | .... | .... | ... | ..... |
| 8191 86 | 824 69 | 290 74 | .... | ..... | ..... | ..... | 8 | 24 | 12 | 2 | 3 | ... .... |
| 9588 95 | 756 98 | 206 59 | 11 | 429 40 | 944 16 | 532 84 | 49 | 35 | 40 | 27 | 12 | ..... |
| 13029 29 | 1467 06 | 402 46 | 6 | 829 43 | 492 91 | 264 96 | 23 | 32 | 30 | 15 | 11 | 69 65 |
| 18156 43 | 526 04 | 168 26 | 6 | 802 59 | 572 77 | 359 73 | 1 | 26 | 7 | 4 | 4 | 235 40 |
| 2768 48 | 214 84 | 76 18 | ..... | ..... .. | .. | ..... | 25 | 8 | 3 | 2 | 3 | ..... |
| 7045 50 | 674 35 | 114 25 | 2 | 162 50 | 232 51 | 128 78 | 17 | 21 | 7 | 3 | 5 | 394 18 |
| 3481 03 | 237 79 | 123 81 | 3 | 500 74 | 188 77 | 77 23 | 25 | 11 | 5 | 5 | 9 | ..... |
| 8769 29 | 617 99 | 195 62 | 4 | 817 90 | 612 36 | 338 58 | 30 | 30 | 7 | 3 | 4 | ..... |
| 20433 16 | 2254 51 | 717 01 | 5 | 484 95 | 467 09 | 240 60 | 32 | 59 | 36 | 7 | 14 | 183 34 |
| 127054 87 | 10872 40 | 2854 07 | 71 | 8008 63 | 4377 90 | 2278 21 | 200 | 383 | 187 | 79 | 107 | 339 08 |
| 407171 27 | 35224 66 | 10524 05 | 206 | 23884 74 | 16403 11 | 7950 18 | 1016 | 1177 | 628 | 281 | 366 | 5185 70 |

APPENDIX D.—Being a Return of Business Transacted by County Court Clerks through

| COUNTIES OR DISTRICTS. | Amount paid out. | Balance in Court. | Number of Writs of Execution issued against goods. | Number of Writs of Execution issued against Lands. | Number of Writs of *Ca. Sa.* issued. | Number of Certificates issued under Creditors' Relief Act. | Amount for which issued, without Costs. | Amount of Costs allowed thereunder. |
|---|---|---|---|---|---|---|---|---|
| | $ c. | $ c. | | | | | $ c. | $ c. |
| Algoma | 1191 00 | | 9 | 9 | | | | |
| Brant | 239 76 | | 43 | 60 | | 1 | 41 00 | 6 30 |
| Bruce | 16 31 | | 48 | 44 | | | | |
| Carleton | 478 34 | | 73 | 57 | | | | |
| Dufferin | | | 34 | 34 | | | | |
| Elgin | 35 00 | | 40 | 34 | | | | |
| Essex | | | 85 | 83 | 1 | | | |
| Frontenac | | 10 00 | 75 | 76 | | | | |
| Grey | | | 43 | 42 | 1 | | | |
| Haldimand | | | 20 | 20 | | | | |
| Halton | | | 17 | 12 | | | | |
| Hastings | 46 68 | | 74 | 62 | | 5 | 591 17 | 31 75 |
| Huron | | | 81 | 77 | 1 | 2 | 299 75 | 19 02 |
| Kent | | | 70 | 64 | | 18 | 1606 37 | 85 19 |
| Lambton | | | 23 | 21 | 1 | 3 | 161 50 | 15 10 |
| Lanark | | | 32 | 24 | | | | |
| Leeds and Grenville | 100 00 | | 39 | 32 | | 13 | 13456 52 | 110 24 |
| Lennox and Addington | 300 00 | | 18 | 17 | | | | |
| Lincoln | 25 00 | 200 00 | 24 | 27 | | | | |
| Manitoulin | | | | | | | | |
| Middlesex | 414 02 | 28 80 | 189 | 201 | 1 | 1 | 51 05 | 7 74 |
| Muskoka | | | 2 | 2 | | | | |
| Norfolk | | | 19 | 19 | | | | |
| Northumberland and Durham | 100 00 | 81 00 | 56 | 48 | | 2 | 498 23 | 24 11 |
| Ontario | | | 44 | 52 | | | | |
| Oxford | | | 40 | 33 | | 1 | 1519 84 | 11 15 |
| Parry Sound | | | 2 | | | | | |
| Peel | 235 00 | | 22 | 19 | | | | |
| Perth | 180 00 | 140 00 | 28 | 26 | | 2 | 581 30 | 16 85 |
| Peterboro' | | 70 40 | 64 | 57 | | | | |
| Prescott and Russell | 154 00 | | 24 | 23 | | 7 | 247 80 | 35 80 |
| Prince Edward | | | 25 | 22 | | 2 | 115 50 | 8 60 |
| Rainy River | | | 1 | | | 6 | 1693 73 | 28 50 |
| Renfrew | | | 28 | 15 | | | | |
| Simcoe | | | 115 | 93 | | | | |
| Stormont, Dundas and Glengarry | | 69 65 | 82 | 88 | | 2 | 181 14 | 11 40 |
| Thunder Bay | 300 00 | | 31 | 28 | | | | |
| Victoria | | | 67 | 63 | | 1 | 27 83 | 1 15 |
| Waterloo | 394 18 | | 43 | 48 | | 7 | 318 17 | 24 71 |
| Welland | | | 38 | 33 | 1 | | | |
| Wellington | | | 66 | 54 | | 6 | 219 37 | 21 80 |
| Wentworth | 83 34 | 100 00 | 112 | 90 | 1 | | | |
| York | 224 14 | 4991 98 | 565 | 506 | 1 | 1 | 81 91 | 4 05 |
| Totals | 4516 77 | 5691 83 | 2513 | 2315 | 8 | 80 | 21692 18 | 463 46 |

out the Province of Ontario, during the year ending 31st December 1890.—*Continued.*

| Number of Partition Matters. | Amount of money paid thereunder. | Amount paid out. | Amount at the joint credit of Judge and Clerk, including interest allowed. | Number of Chattel Mortgages and Bills of Sale filed. | Total amount secured by such Mortgages. | Number of Mortgages renewed. | Number of Discharges filed. | Number of assignments filed under 48 Vic., chap. 26 (Ont.) | No. of Hire receipts filed under 51 Vic. cap. 19. | Total amount secured by such receipts, etc. | Amount of fees earned by the Clerk of Court not including salary paid. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $ c. | $ c. | $ c. | | | | | | | $ c. | $ c. | |
| .. | ..... | ..... | ..... | 118 | 549252 15 | 12 | 2 | 10 | 8 | 2520 00 | 175 20 | |
| .. | ..... | ..... | ..... | 353 | 188380 61 | 137 | 9 | 14 | 55 | 8414 33 | 703 45 | |
| .. | 700 49 | 1775 18 | 9119 41 | 730 | 250303 00 | 180 | 17 | 34 | 40 | 4369 41 | 1115 90 | |
| .. | ..... | ..... | ..... | 488 | 259808 71 | 246 | 62 | 32 | 53 | 8668 87 | 1073 20 | |
| .. | ..... | ..... | ..... | 162 | 70307 99 | 54 | 3 | 8 | 72 | 5879 33 | 373 05 | |
| .. | ..... | ..... | 530 77 | 454 | 140595 41 | 91 | 15 | 20 | 13 | 2140 20 | 674 90 | |
| .. | ..... | ..... | ..... | 556 | 145272 00 | 110 | 7 | 29 | 38 | 5838 00 | 618 00 | |
| .. | ..... | ..... | 278 01 | 327 | 158749 99 | 92 | 5 | 11 | 16 | 2569 80 | 629 73 | |
| .. | ..... | ..... | ..... | 1179 | 325159 81 | 288 | 15 | 18 | 113 | 6652 75 | 886 40 | |
| .. | ..... | ..... | ..... | 181 | 51757 51 | 51 | 3 | 9 | 7 | 850 00 | 240 15 | |
| .. | ..... | ..... | ..... | 158 | 57817 65 | 39 | 3 | 4 | 3 | 235 00 | 296 55 | |
| .. | ..... | 112 54 | 1261 57 | 944 | 245443 65 | 252 | 16 | 24 | 184 | 8070 34 | 1487 98 | |
| 2 | 1800 00 | 1427 66 | 372 34 | 405 | 145990 54 | 145 | 3 | 31 | 31 | 3178 00 | 894 11 | |
| .. | ..... | ..... | ..... | 1018 | 218984 70 | 195 | 21 | 29 | 91 | 7436 50 | 822 70 | |
| .. | ..... | ..... | ..... | 428 | 141466 69 | 107 | 23 | 28 | 35 | 4359 75 | 574 25 | |
| .. | ..... | ..... | ..... | 328 | 100779 53 | 64 | 7 | 16 | 13 | 1229 85 | 422 25 | |
| .. | 152 89 | 29 74 | 126 52 | 290 | 86600 42 | 102 | 9 | 20 | 20 | 2658 30 | 684 87 | |
| .. | ..... | ..... | ..... | 166 | 80892 89 | 71 | 7 | 10 | 10 | 476 00 | 373 40 | |
| 1 | ..... | ..... | ..... | 211 | 38438 72 | 83 | 11 | 15 | 2 | 122 50 | 499 71 | |
| .. | ..... | ..... | ..... | 99 | 425638 11 | 12 | .... | 1 | 20 | 954 91 | 74 35 | |
| .. | ..... | ..... | 759 49 | 483 | 160902 72 | 221 | 9 | 29 | 100 | 11697 50 | 1688 45 | |
| .. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 28 | 1931 00 | 54 45 | |
| 3 | 6147 40 | 5298 79 | 3140 57 | 227 | 44297 03 | 52 | 7 | 10 | 57 | 4411 12 | 485 25 | |
| .. | ..... | ..... | ..... | 588 | 207353 95 | 262 | 17 | 28 | 22 | 3666 58 | 807 49 | |
| .. | ..... | ..... | ..... | 420 | 121968 21 | 127 | 9 | 20 | 35 | 5181 67 | 732 70 | |
| 1 | ..... | 513 75 | 2029 37 | 272 | 131124 25 | 73 | 12 | 24 | 17 | 2296 70 | 693 05 | |
| .. | ..... | ..... | ..... | 106 | 163783 33 | 12 | 3 | 16 | 46 | 4341 34 | 15 15 | |
| .. | ..... | ..... | 54 21 | 124 | 103804 79 | 46 | 5 | 9 | 4 | 402 50 | 326 40 | |
| .. | ..... | ..... | ..... | 352 | 159125 70 | 82 | 8 | 16 | 31 | 11950 25 | 594 25 | |
| .. | ..... | ..... | ..... | 255 | 191709 17 | 99 | 8 | 22 | 9 | 474 68 | 560 43 | |
| .. | ..... | ..... | ..... | 199 | 65876 52 | 36 | 3 | 5 | 7 | 2655 00 | 331 90 | |
| .. | ..... | ..... | ..... | 337 | 79968 13 | 86 | 12 | 18 | 12 | 490 00 | 479 97 | |
| .. | ..... | ..... | ..... | 61 | 2897 29 | .... | .... | .... | .... | ..... | 42 40 | |
| .. | ..... | ..... | ..... | 144 | 52234 80 | 116 | 9 | 11 | 17 | 7399 84 | 405 20 | |
| .. | ..... | ..... | ..... | 595 | 289179 02 | 259 | 11 | 33 | 149 | 10317 00 | 1295 15 | |
| .. | ..... | ..... | ..... | 389 | 75660 23 | 84 | 13 | 44 | 37 | 6137 00 | 865 40 | |
| .. | ..... | ..... | ..... | 41 | 21641 38 | 12 | 1 | 2 | 75 | 6891 00 | 239 85 | From 1st |
| .. | ..... | ..... | ..... | 380 | 199443 42 | 115 | 8 | 12 | 67 | 5008 11 | 517 25 | Aug. 1890. |
| 10 | 2890 24 | 1315 74 | 1574 50 | 149 | 82070 68 | 46 | 16 | 27 | 56 | 8410 00 | 572 00 | |
| 4 | 1646 84 | 751 01 | 895 83 | 346 | 212742 55 | 69 | 21 | 11 | 8 | 1870 29 | 428 60 | |
| 8 | 5415 41 | 183 11 | 5232 30 | 523 | 235253 63 | 119 | 15 | 16 | 100 | 10306 37 | 776 50 | |
| 1 | ..... | ..... | ..... | 322 | 163743 65 | 204 | 19 | 31 | 34 | 10322 90 | 1319 88 | |
| .. | ..... | 1253 46 | 1219 39 | 1572 | 1024392 04 | 413 | 81 | 168 | 143 | 38424 23 | 2849 80 | 14h June, '90 |
| 30 | 18753 27 | 12660 98 | 26594 28 | 16480 | 7470762 57 | 4864 | 525 | 915 | 1878 | 230208 92 | 28701 67 | |

APPENDIX E.—Being a Return of business transacted by Surrogate Registrars

| COUNTIES OR DISTRICTS. | Number of Probates issued. | Number of Letters of Administration issued. | Number of Letters of Guardianship issued. | Number of Probates and Letters issued under R.S.O. 1887, c. 50, Sec. 67, as amended by 53 Vic. c. 17, s. 17, and included in the previous numbers. | Number of Wills proved Guardianship issued where | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Above $100,000. | From $50,000 to $100,000. | From $25,000 to $50,000. | From $10,000 to $25,000. |
| Algoma | 4 | 4 | ..... | ..... | .... | ..... | ..... | 1 |
| Brant | 57 | 36 | 6 | 13 | .... | .... | 3 | 5 |
| Bruce | 68 | 40 | 1 | 9 | ... | ..... | ..... | ..... |
| Carleton | 105 | 59 | 6 | 7 | 3 | 1 | 1 | 7 |
| Dufferin | 26 | 17 | 2 | 1 | ..... | ..... | 1 | ..... |
| Elgin | 66 | 56 | 5 | 13 | .... | ..... | ..... | 3 |
| Essex | 43 | 32 | 3 | 2 | ... | ... | ..... | ..... |
| Frontenac | 58 | 38 | 4 | 5 | 1 | 1 | 1 | 4 |
| Grey | 65 | 42 | 1 | 9 | .... | ..... | 1 | 1 |
| Haldimand | 45 | 18 | ..... | 5 | .. | ..... | .... | 1 |
| Halton | 41 | 16 | 2 | 7 | ..... | ..... | ..... | 1 |
| Hastings | 51 | 31 | 6 | 9 | ..... | ..... | ..... | 3 |
| Huron | 91 | 44 | 3 | 6 | ... | ..... | 1 | 3 |
| Kent | 56 | 31 | 3 | 3 | ..... | ..... | ..... | 1 |
| Lambton | 73 | 34 | 5 | 7 | .. . | ..... | ..... | 5 |
| Lanark | 58 | 19 | 3 | 3 | ..... | ..... | ..... | 3 |
| Leeds and Grenville | 124 | 42 | 2 | 6 | ..... | 2 | 1 | 10 |
| Lennox and Addington | 27 | 14 | 1 | 2 | ..... | ..... | ..... | 2 |
| Lincoln | 47 | 28 | 1 | 7 | ..... | ..... | 1 | 2 |
| Manitoulin | 1 | 2 | ..... | 1 | ..... | ..... | ..... | ..... |
| Middlesex | 173 | 99 | 4 | 29 | ..... | 1 | 6 | 9 |
| Muskoka | 7 | 7 | 1 | 3 | ..... | ..... | ..... | 2 |
| Norfolk | 42 | 28 | 3 | 5 | ..... | ..... | ..... | 2 |
| Northumberland and Durham | 127 | 53 | 7 | 19 | 1 | 1 | 2 | 7 |
| Ontario | 61 | 35 | 4 | 7 | ..... | ... .. | 2 | 1 |
| Oxford | 83 | 47 | 6 | 8 | ..... | ..... | ..... | 5 |
| Parry Sound | 3 | 5 | 2 | 7 | .... | ..... | ..... | ..... |

throughout the Province of Ontario during the year ending December, 1890.

| and Letters of Administration or personalty valued as follows: | | | | Total amount of personalty devolving. | Total amount of realty to be administered under R.S.O. 1887, c. 108, s. 4. | Amount of Fees collected by Surrogate Registrar for— | | | |
|---|---|---|---|---|---|---|---|---|---|
| From $5,000 to $10,000. | From $1,000 to $5,000. | From $400 to $1,000. | $400 and under. | | | Registrar's Fees. | Judge's Fees. | Fee Fund. | Total. |
| | | | | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| ..... | 3 | 2 | 2 | 16340 00 | ..... | 60 78 | 31 50 | 21 50 | 113 78 |
| 10 | 29 | 18 | 34 | 297903 39 | 232212 00 | 870 45 | 470 50 | 302 00 | 1642 95 |
| 4 | 37 | 31 | 37 | 131193 00 | 40805 00 | 932 05 | 365 60 | 234 50 | 1532 15 |
| 15 | 60 | 38 | 45 | 1293351 80 | 62390 00 | 1666 40 | 2510 00 | 1403 50 | 5579 90 |
| 2 | 17 | 14 | 11 | 95082 17 | 45640 00 | 407 62 | 186 50 | 121 00 | 714 12 |
| 9 | 45 | 20 | 41 | 205638 10 | 74025 00 | 1062 30 | 544 20 | 306 20 | 1912 70 |
| 3 | 25 | 21 | 21 | 89958 00 | 32215 00 | 517 00 | 353 00 | 172 00 | 1042 00 |
| 5 | 31 | 24 | 33 | 736444 57 | 239527 00 | 917 34 | 1085 40 | 543 50 | 2546 24 |
| 3 | 27 | 36 | 40 | 160318 72 | 92246 00 | 800 55 | 344 00 | 254 00 | 1398 55 |
| 7 | 13 | 22 | 19 | 109890 93 | 174777 49 | 618 40 | 228 60 | 158 50 | 1005 50 |
| 6 | 22 | 11 | 19 | 112553 62 | 129825 00 | 583 10 | 238 30 | 142 00 | 963 40 |
| 1 | 27 | 23 | 28 | 127905 94 | 43325 00 | 728 51 | 313 00 | 208 00 | 1249 51 |
| 7 | 52 | 35 | 40 | 251103 86 | 55600 00 | 1292 15 | 723 00 | 355 50 | 2370 65 |
| 5 | 18 | 29 | 30 | 107731 27 | 54730 00 | 679 50 | 438 50 | 204 10 | 1322 10 |
| 5 | 44 | 29 | 29 | 227304 43 | 263332 00 | 799 00 | 400 50 | 299 00 | 1498 50 |
| 7 | 20 | 23 | 27 | 143640 00 | 122841 00 | 682 95 | 308 80 | 203 50 | 1195 25 |
| 4 | 52 | 45 | 52 | 634230 06 | 71800 00 | 1527 36 | 943 00 | 610 50 | 3080 86 |
| 3 | 13 | 11 | 13 | 82343 30 | 28100 00 | 424 30 | 241 50 | 114 50 | 780 30 |
| 5 | 18 | 24 | 25 | 257400 17 | 22660 00 | 702 65 | 439 90 | 260 00 | 1402 55 |
| ..... | ..... | ..... | 3 | 765 00 | ..... | 14 69 | 6 00 | 4 50 | 25 19 |
| 21 | 81 | 74 | 84 | 811482 96 | 151355 00 | 2191 20 | 1417 50 | 854 00 | 4462 70 |
| 2 | 3 | 1 | 7 | 42569 78 | 2235 00 | 118 18 | 60 50 | 50 00 | 228 68 |
| 6 | 22 | 20 | 20 | 116331 54 | 57335 00 | 717 37 | 312 50 | 198 50 | 1228 37 |
| 13 | 60 | 41 | 62 | 936446 05 | 475666 00 | 1497 25 | 1249 50 | 780 50 | 3527 25 |
| 7 | 29 | 18 | 39 | 210263 97 | 61425 00 | 882 85 | 502 70 | 270 50 | 1656 05 |
| 16 | 47 | 32 | 36 | 329816 53 | 121155 00 | 1373 10 | 727 60 | 391 00 | 2491 70 |
| ..... | ..... | 1 | 9 | 1174 00 | 3300 00 | 41 05 | 13 10 | 7 50 | 61 65 |

APPENDIX E—Being a Return of business transacted by Surrogate Registrars

| COUNTIES OR DISTRICTS. | Number of Probates issued. | Number of Letters of Administration issued. | Number of Letters of Guardianship issued. | Number of Probates and Letters issued under R.S.O. 1887, c. 50, Sec. 67, as amended by 53 Vic., chap. 17, Sec. 17, and included in the previous numbers. | Number of Wills proved Guardianship issued where | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Above $100,000. | From $50,000 to $100,000. | From $25,000 to $50,000. | From $10,000 to $25,000. |
| Peel | 57 | 28 | 8 | 8 | ..... | 1 | ..... | 3 |
| Perth | 94 | 42 | 6 | 5 | ..... | ..... | 1 | 3 |
| Peterboro' | 53 | 23 | 1 | 8 | 1 | 1 | 2 | 2 |
| Prescott and Russell | 38 | 21 | 1 | 3 | ..... | 1 | 1 | 2 |
| Prince Edward | 30 | 14 | 4 | 6 | ..... | ..... | ..... | 3 |
| Rainy River | ..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... |
| Renfrew | 30 | 19 | 1 | 6 | ..... | ..... | ..... | 2 |
| Simcoe | 114 | 53 | 7 | 20 | 2 | 1 | 1 | 3 |
| Stormont, Dundas and Glengarry | 77 | 21 | 2 | 20 | ..... | 1 | ..... | 4 |
| Thunder Bay | ..... | 3 | ..... | 1 | ..... | ..... | ..... | ..... |
| Victoria | 36 | 22 | 3 | 8 | ..... | 1 | ..... | 2 |
| Waterloo | 66 | 27 | 1 | 3 | ..... | ..... | ..... | 5 |
| Welland | 37 | 39 | 4 | 6 | ..... | ..... | ..... | 3 |
| Wellington | 98 | 39 | 7 | 16 | ..... | ..... | 1 | 4 |
| Wentworth | 129 | 90 | 7 | 27 | ..... | 2 | 2 | 7 |
| York | 319 | 245 | 19 | 59 | 6 | 3 | 15 | 29 |
| Total | 2780 | 1536 | 152 | 389 | 14 | 17 | 43 | 150 |

throughout the Province of Ontario, etc.—*Continued.*

| and Letters of Administration or personalty valued as follows: | | | | Total amount of personalty devolving. | Total amount of realty to be administered under R.S.O. 1887, c. 108, s. 4. | Amount of Fees collected by Surrogate Registrar for— | | | |
|---|---|---|---|---|---|---|---|---|---|
| From $5,000 to $10,000. | From $1,000 to $5,000. | From $400 to $1,000. | $200 and under. | | | Registrar's Fees. | Judge's Fees. | Fee Fund. | Total. |
| | | | | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 4 | 36 | 21 | 28 | 235382 22 | 186433 67 | 803 78 | 411 30 | 253 50 | 1468 58 |
| 9 | 53 | 31 | 45 | 272036 78 | 79930 00 | 1281 15 | 772 80 | 378 00 | 2431 95 |
| 5 | 33 | 12 | 20 | 1040471 81 | 22710 00 | 693 20 | 1212 50 | 648 50 | 2554 20 |
| 1 | 19 | 22 | 14 | 176776 83 | 116899 00 | 548 28 | 268 00 | 193 00 | 1009 28 |
| 4 | 13 | 14 | 14 | 114067 80 | 16150 00 | 432 91 | 198 00 | 131 50 | 762 41 |
| 1 | ..... | 1 | ..... | 6148 50 | .... . ..... | 23 40 | 9 50 | 7 00 | 39 90 |
| 2 | 12 | 12 | 20 | 97966 25 | 79833 75 | 363 75 | 169 50 | 193 50 | 726 75 |
| 11 | 48 | 37 | 51 | 552934 98 | 48775 00 | 1407 48 | 871 00 | 547 50 | 2825 98 |
| 10 | 42 | 23 | 20 | 294116 07 | 28002 15 | 822 45 | 365 00 | 257 50 | 1444 95 |
| ..... | ..... | 2 | 1 | 270 00 | 960 00 | 15 70 | 5 00 | 4 00 | 24 70 |
| 4 | 15 | 21 | 18 | 166539 74 | 160657 00 | 455 75 | 258 50 | 174 50 | 888 75 |
| 6 | 40 | 22 | 22 | 227171 88 | 225951 00 | 794 42 | 401 50 | 280 00 | 1475 92 |
| ..... | 22 | 19 | 36 | 119602 19 | 144053 50 | 788 64 | 374 50 | 196 50 | 1359 64 |
| 2 | 61 | 30 | 46 | 240953 00 | 341802 00 | 1297 65 | 543 10 | 357 70 | 2198 45 |
| 16 | 69 | 56 | 74 | 573699 92 | 148263 00 | 1905 53 | 1054 70 | 639 50 | 3599 73 |
| 46 | 160 | 128 | 195 | 3777786 00 | 420266 00 | 4847 83 | 2852 50 | 2507 50 | 10207 83 |
| 287 | 1418 | 1094 | 1410 | 15435107 13 | 4679177 56 | 38590 02 | 24222 60 | 15240 00 | 78052 62 |

APPENDIX F.—Schedule shewing Return of Fees and Emoluments of the different year ending 31st

| COUNTY OR DISTRICT. | COUNTY TOWN. | OFFICE. | OFFICERS. | Amount Earned. | Salary paid by the Government. |
|---|---|---|---|---|---|
| | | | | $ c. | $ c. |
| Algoma | Sault Ste. Marie. | Sheriff | W. H. Carney | 2320 59 | 1000 00 |
| | | Surrogate Judge | Judge McCrea | 35 00 | ..... |
| | | Local Master | " | 31 50 | ..... |
| | | District Attorney | J. J. Kehoe | 200 00 | ..... |
| | | Clerk of the Peace | " | 311 11 | 800 00 |
| | | Local Registrar | T. A. P. Towers | 52 00 | 150 00 |
| | | District Court Clerk | " | 175 20 | 600 00 |
| | | Surrogate Registrar | " | 60 78 | ..... |
| Brant | Brantford | Sheriff | W. J. Scarfe | 2380 45 | ..... |
| | | Surrogate Judge | Judge Jones | Commuted at | |
| | | Local Master | " | Commuted at | |
| | | County Attorney | G. R. VanNorman, Q.C. | 911 02 | ..... |
| | | Clerk of the Peace | " | 1286 52 | ..... |
| | | Local Registrar | W. B. Rubidge | 722 45 | 675 00 |
| | | County Court Clerk | " | 703 45 | ..... |
| | | Surrogate Registrar | " | 870 45 | ..... |
| Bruce | Walkerton | Sheriff | W. Sutton | 3915 88 | ..... |
| | | Surrogate Judge | Judge Kingsmill | Commuted at | |
| | | Local Master & Deputy Registrar | W. A. McLean | Commuted at | |
| | | County Attorney | Thos. Dixon | 622 95 | ..... |
| | | Clerk of the Peace | " | 1555 03 | ..... |
| | | Deputy Clerk of the Crown | Wm. Gunn | 180 86 | 450 00 |
| | | County Court Clerk | " | 1115 90 | ..... |
| | | Surrogate Registrar | " | 932 05 | ..... |
| Carleton | Ottawa | Sheriff | John Sweetland | 5655 30 | ..... |
| | | Surrogate Judge | Judge Ross | Commuted at | |
| | | Local Master | W. M. Matheson | 2476 61 | ..... |
| | | Deputy Registrar | " | 585 34 | ..... |
| | | County Attorney | Robert Less, Q.C. | 444 80 | ..... |

County Judicial Officers in the Province of Ontario, earned and received during the December, 1890.

| Total Earnings and Salary. | Total Earnings and Salary by officer in all his offices. | Amount received for present year. | Amount received for previous years. | Total receipts. | Total receipts by officer from all his offices. | Amount disbursed. | Net amount received. | Net amount due to or received by officer by virtue of all his offices. | Average of gross Earnings for years 1886 to 1890, both inclusive. | Average of net amount due to or received by officer during these years. |
|---|---|---|---|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| ..... | 3320 59 | 2062 74 | 340 40 | ..... | 3403 14 | 1491 01 | 1912 13 | 1829 58 | 3294 04 | 1907 62 |
| 35 00 | ..... | 33 10 | 34 60 | 67 70 | ..... | ..... | 67 70 | ..... | 27 30 | 27 30 |
| 31 50 | 66 50 | 31 50 | ..... | 31 50 | 99 20 | ..... | 31 50 | 66 50 | 33 03 | 33 03 |
| 200 00 | ..... .. | 125 00 | 120 00 | 245 00 | ..... | . ..... | 245 00 | ..... | 463 71 | 463 71 |
| 1111 11 | 1311 11 | 1002 51 | 102 66 | 1105 17 | 1350 17 | 10 10 | 1095 07 | 1301 01 | 784 97 | 777 09 |
| 202 00 | ..... | 202 00 | .. ..... | 202 00 | ..... | 5 00 | 197 00 | ..... | 217 70 | 254 30 |
| 775 20 | ..... | 775 20 | 30 00 | 805 20 | ..... | 38 20 | 767 00 | ..... | 835 05 | 822 41 |
| 60 78 | 1037 98 | 60 78 | ..... | 60 78 | 1067 98 | 5 00 | 55 78 | 989 78 | 47 59 | 44 95 |
| ..... | 2380 45 | 1998 69 | 82 78 | ..... | 2081 47 | 1200 00 | 881 47 | 1180 45 | 2790 31 | 1677 40 |
| ..... | ..... | 360 00 | ..... | 360 00 | ..... | ..... | 360 00 | ..... | 430 80 | 430 80 |
| ..... | ..... | 577 00 | ..... | 577 00 | 937 00 | 25 00 | 552 00 | 912 00 | 265 02 | 265 04 |
| 911 02 | ..... | 911 02 | ..... | 911 02 | ..... | ..... | 911 02 | ..... | 894 02 | 894 02 |
| 1286 52 | 2197 54 | 1286 52 | ..... | 1286 52 | 2197 54 | 57 50 | 1229 02 | 2140 04 | 1073 24 | 1061 76 |
| 1397 45 | ..... | 1384 45 | ..... | 1384 45 | ..... | 314 20 | 1070 25 | ..... | 1299 03 | 1096 39 |
| 703 45 | ..... | 692 80 | ..... | 692 80 | ..... | 178 20 | 514 60 | .... ..... | 810 49 | 685 42 |
| 870 45 | 2971 35 | 870 45 | ..... | 870 45 | 2947 70 | 221 62 | 648 83 | 2257 33 | 683 75 | 563 43 |
| ..... | 3915 88 | 3412 00 | 339 90 | .... ... | 3751 90 | 1099 70 | 2652 20 | 2816 18 | 4500 45 | 3235 44 |
| ..... | 408 00 | 408 00 | ..... | ..... | 408 00 | ..... | ..... | 408 00 | 410 20 | 410 20 |
| 850 00 | ..... | ..... | 850 00 | ..... | ..... | ..... | ..... | 850 00 | 682 96 | 679 96 |
| 622 95 | ..... | 536 95 | 391 15 | 928 10 | ..... . | 26 35 | 901 75 | ..... | 793 51 | 744 74 |
| 1555 03 | 2177 98 | 1076 83 | 597 62 | 1674 45 | 2602 55 | 165 73 | 1508 72 | 1985 90 | 1680 50 | 1558 09 |
| 630 86 | ..... | 630 86 | ..... | 630 86 | ..... | ..... | 630 86 | ..... | 672 35 | 672 35 |
| 1115 90 | ..... | 717 80 | 219 11 | 936 91 | ..... | 546 67 | 390 24 | ..... | 1085 40 | 550 77 |
| 932 05 | 2678 81 | 770 85 | 53 00 | 823 85 | 2391 62 | 273 33 | 550 52 | 1858 81 | 762 63 | 491 56 |
| ..... | 5655 30 | 5415 26 | 349 07 | ..... | 5764 33 | 2734 00 | 3030 33 | 2921 30 | 6324 35 | 3132 83 |
| ..... | 500 00 | 500 00 | ..... | ..... | 500 00 | ..... | ..... | 500 00 | 1107 70 | 1107 70 |
| 2476 61 | ..... | 2415 98 | 134 65 | 2550 63 | ..... | 277 01 | 2273 62 | ..... | 2525 75 | 2383 25 |
| 585 34 | 3061 95 | 571 29 | 6 40 | 577 69 | 3128 32 | 58 29 | 519 40 | 2726 65 | 739 66 | 679 85 |
| 444 80 | ..... | 360 80 | 183 20 | 544 00 | ..... | 8 00 | 536 00 | ..... | 606 68 | 589 60 |

APPENDIX F.—Schedule shewing Return of Fees and Endowments of the

| COUNTY OR DISTRICT. | COUNTY TOWN. | OFFICE. | OFFICER. | Amount Earned. | Salary paid by the Government. |
|---|---|---|---|---|---|
| | | | | $ c. | $ c. |
| Carleton—*Con...* | Ottawa ..... | Clerk of the Peace..... | Robt. Lees, Q.C. .... | 1072 02 | ..... |
| | | Deputy Cl'k of the Crown | J. P. Featherston ..... | 558 53 | 450 00 |
| | | County Court Clerk .... | " .. .. | 1073 20 | ..... |
| | | Surrogate Registrar..... | " ..... | 1666 40 | ..... |
| Dufferin..... | Orangeville..... | Sheriff ..... | Thos. Bowles ... ..... | 2904 83 | ..... |
| | | Surrogate Judge..... | Judge McCarthy ..... | Commuted at | |
| | | Local Master..... | " ..... | 179 10 | ..... |
| | | County Attorney ..... | J. P. McMillan..... .. | 107 00 | ..... |
| | | Clerk of the Peace..... | " .... . | 471 33 | ..... |
| | | Local Registrar..... .. | John McLaren..... | 284 70 | 675 00 |
| | | County Court Clerk ... | " ..... | 373 05 | ..... |
| | | Surrogate Registrar..... | " ..... | 407 62 | ..... |
| Elgin . ..... | St. Thomas..... | Sheriff ..... | Dugald Brown..... | 3236 57 | ..... |
| | | Surrogate Judge..... | Judge Hughes..... | 544 20 | .... .. |
| | | Local Master..... | Robert Miller ..... | 1464 81 | ..... |
| | | County Attorney .. ... | D. J. Donahue.. .. ... | 646 09 | ..... |
| | | Clerk of the Peace.... . | " ..... | 913 33 | ..... . |
| | | Local Registrar ..... | D. McLaws ..... | 323 70 | 675 00 |
| | | County Court Clerk .... | " ..... . | 674 90 | ..... |
| | | Surrogate Court ..... | " ..... | 1062 30 | ..... |
| Essex ..... | Sandwich ..... | Sheriff ..... | J. C. Iler..... | 5170 36 | ..... |
| | | Surrogate Judge.... ... | Judge Horne ..... | 353 00 | ..... |
| | | Local Master..... | S. S. Macdonell, Q.C... | 737 15 | ..... |
| | | Deputy Registrar..... | " ... | 249 00 | .. ..... |
| | | County Attorney..... | " ... | 484 60 | ..... |
| | | Clerk of the Peace..... | " ... | 637 70 | ..... |
| | | Deputy Cl'k of the Crown | F. E. Marcon..... | 498 00 | 450 00 |
| | | County Court Clerk .... | " ..... | 618 00 | ..... |
| | | Surrogate Registrar .... | " ..... | 517 00 | .... ... |
| Frontenac..... | Kingston..... | Sheriff ..... .. | Wm. Ferguson ..... | 2307 36 | ..... |

different County Judicial Officers in the Province of Ontario, etc.—*Continued.*

| Total Earnings and Salary. | Total Earnings and Salary by officer in all his offices. | Amount received for present year. | Amount received for previous years. | Total receipts. | Total receipts by officer from all his offices. | Amount disbursed. | Net amount received. | Net amount due to or received by officer by virtue of all his offices. | Average of gross earnings for year 1886 to 1890 both inclusive. | Average of net amount due to or received by officer during these years. |
|---|---|---|---|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 1072 02 | 1512 82 | 937 76 | 127 00 | 1064 76 | 1608 76 | 13 10 | 1051 66 | 1491 72 | 1051 77 | 1027 96 |
| 1008 50 | ..... | 938 50 | 67 00 | 1005 50 | ..... | 196 25 | 809 25 | ..... | 1010 03 | 803 68 |
| 1073 20 | ..... | 1033 70 | 58 00 | 1091 70 | .. .. | 196 25 | 895 45 | ..... | 1254 13 | 1024 78 |
| 1666 40 | 3748 10 | 1421 00 | 130 00 | 1291 00 | 3388 20 | 398 50 | 892 50 | 2957 10 | 1114 40 | 731 30 |
| ..... | 2904 33 | 2467 38 | 555 04 | ..... | 3022 42 | 867 03 | 2155 39 | 2037 80 | 2572 36 | 1749 63 |
| 168 00 | ... . .. | 168 00 | ..... | 168 00 | ..... | ..... | 168 00 | ..... | 120 30 | 120 30 |
| 179 10 | 347 10 | 107 80 | 76 49 | 184 29 | 352 29 | 9 84 | 342 45 | 337 26 | 135 18 | 129 06 |
| 107 00 | ..... | 107 00 | ..... | 107 00 | ..... | ..... | 107 00 | ..... | 147 34 | 123 34 |
| 471 33 | 578 33 | 471 33 | ..... | 471 33 | 578 33 | ..... | 471 33 | 578 33 | 591 14 | 521 14 |
| 959 70 | ..... | 959 70 | 36 00 | 995 70 | ..... | 23 85 | 971 85 | .. ..... | 903 06 | 886 64 |
| 373 05 | ..... | 367 35 | 2 75 | 370 10 | .. ..... | 16 25 | 353 85 | ..... | 349 63 | 335 65 |
| 407 62 | 1740 37 | 407 62 | 15 80 | 423 42 | 1789 22 | 21 50 | 401 92 | 1678 77 | 289 25 | 268 51 |
| ..... | 3236 57 | 2103 19 | 826 60 | ..... | 2929 79 | 1691 32 | 1238 47 | 1545 25 | 4390 57 | 2635 98 |
| ..... | 544 20 | 544 20 | ..... | ..... | 544 20 | ..... | 544 20 | 544 20 | 406 82 | 400 82 |
| ..... | 1464 81 | 625 87 | 501 15 | ..... | 1127 02 | 82 00 | 1045 02 | 1382 81 | 1046 41 | 985 15 |
| 646 09 | ..... .. | 646 09 | 195 52 | 842 61 | ..... | 50 00 | 792 61 | ..... | 1059 89 | 1002 05 |
| 913 33 | 1559 42 | 531 21 | 345 04 | 876 25 | 1718 86 | 33 30 | 842 95 | 1476 12 | 933 20 | 897 89 |
| 998 70 | ..... | 956 70 | 54 30 | 1011 00 | ..... | 175 25 | 835 75 | ..... | 1201 56 | 1111 62 |
| 674 90 | ..... | 650 28 | 74 00 | 724 28 | ..... | 61 50 | 662 78 | ..... | 801 80 | 733 01 |
| 1062 30 | 2735 90 | 1011 30 | 28 00 | 1039 30 | 2774 58 | 61 50 | 977 80 | 2437 65 | 805 50 | 683 20 |
| ..... | 5170 36 | 4191 02 | 680 77 | ..... | 4871 79 | 1500 75 | 3371 04 | 3669 61 | 4514 84 | 2812 31 |
| ..... | 353 00 | 353 00 | ..... | ..... | 353 00 | ..... | ..... | 353 00 | 359 60 | 359 60 |
| 737 15 | ..... | 580 25 | 177 91 | 758 16 | ..... | 64 66 | 693 50 | ..... | 603 83 | 590 89 |
| 249 00 | ..... | 231 29 | ..... | 231 29 | ..... | ..... | 231 29 | ..... | 282 12 | 280 02 |
| 484 60 | ..... | 268 70 | ..... | 268 70 | ..... | 55 00 | 213 70 | ..... | 443 54 | 425 54 |
| 637 70 | 2108 45 | 449 85 | 56 40 | 506 25 | 1764 30 | 35 00 | 471 25 | 1953 79 | 912 74 | 899 78 |
| 948 00 | ..... | 948 00 | ..... | 948 00 | ..... | ..... | 948 00 | ..... .... | 806 48 | 788 34 |
| 618 00 | ..... | 618 00 | ..... | 618 00 | ..... | 75 00 | 543 00 | ..... .. | 623 55 | 593 55 |
| 517 00 | 2083 00 | 517 00 | ..... | 517 00 | 2083 00 | ..... | 517 00 | 2008 00 | 576 76 | 565 33 |
| ..... | 2307 36 | 2307 36 | ..... | ..... | 2307 36 | 623 33 | 1674 03 | 1674 03 | 2475 38 | 1637 00 |

APPENDIX F.—Schedule shewing return of Fees and Emoluments of the

| COUNTY OR DISTRICT. | COUNTY TOWN. | OFFICE. | OFFICER. | Amount earned. | Salary paid by the Government. |
|---|---|---|---|---|---|
| | | | | $ c. | $ c. |
| Frontenac—*Con.* | Kingston..... | Surrogate Judge..... | Judge Price ..... | commuted at | |
| | | Local Master..... | *J. A. Henderson, Q.C. | 796 43 | ..... |
| | | Deputy Registrar..... | " | 321 03 | ..... |
| | | County Attorney ..... | B. M. Britton, Q.C... | 627 36 | ..... |
| | | Clerk of the Peace..... | " ... | 1203 01 | ..... |
| | | Deputy Clerk of Crown | †Archibald McGill..... | 158 90 | 450 00 |
| | | County Court Clerk.... | " .... | 629 73 | ..... |
| | | Surrogate Registrar.... | " ..... | 917 34 | ..... |
| Grey..... | Owen Sound ..... | Sheriff ..... | C. H. Moore ... ..... | 4979 70 | ..... |
| | | Surrogate Judge..... | Judge Lane ..... | 344 00 | ..... |
| | | Local Master..... | Alfred Frost ..... .... | 152 66 | ..... |
| | | County Attorney ..... | " ..... | 226 93 | ..... |
| | | Clerk of the Peace..... | Wm. Armstrong.... .. | 1530 80 | ..... |
| | | Local Registrar.... ... | George Inglis..... | 164 30 | 750 00 |
| | | County Court Clerk ... | " ..... | 886 40 | ..... |
| | | Surrogate Registrar .. | " ..... | 800 55 | ..... |
| Haldimand.... | Cayuga..... | Sheriff ..... | R. H. Davis..... .... | 2104 86 | ..... |
| | | Surrogate Judge..... | Judge Upper..... | 228 60 | ..... |
| | | Local Master..... | " ..... | 5 30 | ..... |
| | | County Attorney..... | J. R. Martin..... | 532 68 | ..... |
| | | Clerk of the Peace..... | " ..... | 1182 42 | ..... |
| | | Local Registrar... .... | Jas. Mitchell..... | 89 70 | 600 00 |
| | | County Court Clerk.... | " ..... | 240 15 | ..... .. |
| | | Surrogate Registrar ... | " ..... | 618 40 | .. ..... |
| Halton..... | Milton ..... | Sheriff ..... .... | M. Clements ..... | 1602 60 | ..... |
| | | Surrogate Judge.. .... | Judge Miller ... ..... | commuted at | |
| | | Local Master..... | " ..... | 123 70 | ..... |
| | | County Attorney ..... | T. G. Matheson ..... | 604 10 | ..... |
| | | Clerk of the Peace..... | " ..... | 1109 69 | ..... |
| | | Local Registrar..... | Walter A. Lawrence... | 30 55 | 600 00 |

*Succeeded by J. M. Machar, Q.C. †Now Local Registrar.

different County Judical Officers in the Province of Ontario, etc.—*Continued.*

| Total Earnings and Salary. | Total Earnings and Salary by officer in all his offices. | Amount received for present year. | Amount received for previous years. | Total receipts. | Total receipts by officer from all his offices. | Amount disbursed. | Net amount received. | Net amount due to or received by officer by virtue of all his offices. | Average of gross earnings for years 1886 to 1890, both inclusive. | Average of net amount due to or received by officer during these years. |
|---|---|---|---|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| ..... | 752 00 | 752 00 | ..... | ..... | 752 00 | ..... | 752 00 | 752 00 | 672 86 | 672 86 |
| 796 43 | ..... | 796 43 | 156 00 | 952 43 | ..... | 85 00 | 867 43 | ..... | 778 14 | 678 50 |
| 321 03 | 1117 46 | 321 03 | ..... | 321 03 | 1273 46 | 80 00 | 241 03 | 952 46 | 325 51 | 226 04 |
| 627 36 | ..... | 456 36 | 173 25 | 629 61 | ..... | 110 00 | 519 61 | ..... | 433 81 | 371 86 |
| 1203 01 | 1830 37 | 730 41 | 407 24 | 1137 65 | 1767 26 | 236 78 | 900 87 | 1483 59 | 1105 75 | 869 52 |
| 608 90 | ..... | 605 90 | 40 00 | 645 90 | ..... | 10 00 | 635 90 | ..... | 613 11 | 466 38 |
| 629 73 | ..... | 512 00 | 118 69 | 630 69 | ..... | 260 00 | 370 69 | ..... | 615 77 | 411 23 |
| 917 34 | 2155 97 | 715 00 | 74 44 | 789 44 | 2066 03 | 420 00 | 369 44 | 1465 97 | 540 20 | 420 85 |
| ..... | 4919 70 | 4189 35 | 1600 67 | .... ... | 5790 02 | 2073 20 | 3716 82 | 2906 50 | 4442 17 | 2473 23 |
| ..... | 344 00 | 344 00 | ..... | ..... | 344 00 | ..... | ..... | 344 00 | 343 40 | 343 40 |
| 152 66 | ..... | 57 00 | 29 90 | 86 90 | ..... | ..... | 86 90 | ..... | 307 25 | 307 25 |
| 226 93 | 379 59 | 135 45 | 76 40 | 211 85 | 298 75 | 27 00 | 271 75 | 352 59 | 309 33 | 283 72 |
| ..... | 1530 80 | 1149 30 | 263 55 | ..... | 1412 85 | 117 95 | 1294 90 | 1412 85 | 1601 36 | 1491 52 |
| 914 30 | ..... | 864 50 | 18 65 | 883 15 | ..... | 34 25 | 848 90 | ..... | 890 21 | 864 91 |
| 886 40 | ..... | 861 30 | ..... | 861 30 | ..... | 63 55 | 797 75 | ..... | 822 24 | 772 26 |
| 800 55 | 2601 25 | 675 30 | 79 80 | 755 10 | 2499 55 | 261 20 | 493 90 | 2242 25 | 768 55 | 571 65 |
| ..... | 2104 86 | 2038 17 | 86 91 | ..... | 2191 77 | 550 16 | 1641 61 | 1554 70 | 2081 68 | 1591 40 |
| 228 60 | .. ..... | 228 60 | ..... | 228 60 | ..... | ..... | 228 60 | ..... | 215 92 | 215 92 |
| 5 30 | 233 90 | 2 80 | 103 00 | 105 80 | 334 40 | ..... | 105 80 | 334 40 | 70 48 | 66 48 |
| 532 68 | ..... | 500 68 | 115 44 | 616 12 | ..... | 75 00 | 541 12 | ..... | 481 79 | 441 79 |
| 1182 42 | 1715 10 | 824 38 | 386 50 | 1210 88 | 1827 00 | 250 00 | 960 88 | 1390 10 | 1118 37 | 868 37 |
| 689 70 | ..... | 689 70 | ..... | 689 70 | ..... | 15 00 | 674 70 | ... .... | 684 73 | 693 73 |
| 240 15 | ..... | 240 15 | ..... | 240 15 | ..... | 25 00 | 215 15 | ..... | 244 14 | 250 14 |
| 618 40 | 1548 25 | 618 40 | ..... | 618 40 | 1548 20 | 90 00 | 528 40 | 1418 25 | 568 01 | 506 41 |
| ..... | 1602 60 | 1467 33 | 33 37 | ..... | 1500 70 | 495 00 | 1005 70 | 1107 60 | 1600 00 | 1139 57 |
| 417 00 | ..... | ..... | ..... | 417 00 | ..... | ..... | 417 00 | ..... | 289 78 | 289 78 |
| 123 70 | 540 70 | 30 60 | 59 00 | 89 60 | 506 60 | 18 00 | 71 60 | 522 70 | 129 87 | 103 47 |
| 604 10 | ..... | 531 10 | 186 08 | 717 18 | ..... | 3 21 | 713 97 | ..... | 378 99 | 373 15 |
| 1109 69 | 1713 79 | 718 87 | 400 55 | 1119 42 | 1836 60 | 11 01 | 1108 41 | 1699 57 | 954 57 | 941 18 |
| 630 55 | ..... | 630 55 | ..... | 630 55 | ..... | 200 00 | 430 55 | ..... | 642 61 | 472 61 |

APPENDIX F.—Schedule shewing Return of Fees and Emoluments of the

| County or District. | County Town. | Office. | Officer. | Amount Earned. | Salary paid by the Government. |
|---|---|---|---|---|---|
| | | | | $ c. | $ c. |
| Halton—*Con* | Milton | County Court Clerk | Walter A. Lawrence. | 296 55 | |
| | | Surrogate Registrar | " | 583 10 | |
| Hastings | Belleville | Sheriff | Wm. Hope | 4757 53 | |
| | | Surrogate Judge | Judge Lazier | commuted at | |
| | | Local Master and Deputy Registrar | S. S. Lazier | commuted at | |
| | | County Attorney | G. E. Henderson, Q.C. | 474 25 | |
| | | Clerk of the Peace | " | 1583 65 | |
| | | Deputy Clerk of the Crown | A. G. Northrup | 773 33 | 450 00 |
| | | County Court Clerk | " | 1487 98 | |
| | | Surrogate Registrar | " | 728 51 | |
| Huron | Goderich | Sheriff | R. Gibbons | 3452 38 | |
| | | Surrogate Judge | Judge Toms | 723 00 | |
| | | Local Master and Deputy Registrar | S. Malcomson | commuted at | |
| | | County Attorney | Ira Lewis | 429 69 | |
| | | Clerk of the Peace | " | 1490 76 | |
| | | Deputy Clerk of the Crown | D. Macdonald | 957 10 | 500 00 |
| | | County Court Clerk | " | 894 11 | |
| | | Surrogate Registrar | " | 1292 15 | |
| Kent | Chatham | Sheriff | John Mercer | 4003 31 | |
| | | Surrogate Judge | Judge Bell | 438 50 | |
| | | Local Master and Deputy Registrar | R. O'Hara | commuted at | |
| | | County Attorney | Wm. Douglas, Q.C. | 677 02 | |
| | | Clerk of the Peace | " | 1289 00 | |
| | | Deputy Clerk of the Crown | W. A. Campbell | 129 00 | 450 00 |
| | | County Court Clerk | " | 822 70 | |
| | | Surrogate Registrar | " | 679 50 | |
| Lambton | Sarnia | Sheriff | Jas. Flintoft | 3171 44 | |

different County Judicial Officers in the Province of Ontario, etc.—*Continued.*

| Total Earnings and Salary. | Total Earnings and Salary by officer in all his offices. | Amount received for present year. | Amount received for previous years. | Total receipts. | Total receipts by officer from all his offices. | Amount disbursed. | Net amount received. | Net amount due to or received by officer by virtue of all his offices. | Average of gross earnings for years 1886 to 1890, both inclusive. | Average of net amount due to or received by officer during these years. |
|---|---|---|---|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ |
| 296 55 | ..... | 296 55 | ..... | 296 55 | ..... | 135 00 | 161 55 | ..... | 297 64 | 167 |
| 583 10 | 1510 20 | 593 10 | ..... | 583 10 | 1510 20 | 165 00 | 418 10 | 1010 20 | 549 13 | 415 13 |
| ..... | 4757 53 | 3554 40 | 832 66 | ..... | 4387 06 | 2174 93 | 2212 13 | 2545 40 | 5733 95 | 2907 94 |
| ..... | ..... | ..... | ..... | ..... | 348 80 | ..... | 348 80 | 348 80 | 449 84 | 449 84 |
| ..... | 3000 00 | ..... | ..... | ..... | 3000 00 | ..... | ..... | 3000 00 | 2551 73 | 2230 33 |
| 474 25 | ..... | 409 75 | 90 13 | 499 88 | ..... | 100 00 | 399 88 | ..... | 614 72 | 524 72 |
| 1583 66 | 2057 90 | 1066 42 | 508 77 | 1575 19 | 2075 07 | 250 00 | 1325 19 | 1707 90 | 1586 70 | 1256 70 |
| 1223 33 | ..... | 823 00 | 221 00 | 1044 00 | ..... | 241 00 | 803 00 | ..... | 1121 85 | 1017 25 |
| 1487 98 | ..... | 887 00 | 269 00 | 1156 00 | ..... | 191 00 | 965 00 | ..... | 1397 09 | 1190 89 |
| 728 51 | 3439 82 | 528 00 | 260 00 | 788 00 | 2988 00 | 188 00 | 600 00 | 2 819 82 | 697 21 | 492 81 |
| ..... | 3452 38 | 2961 16 | 458 49 | ..... | 3419 65 | 1610 27 | 1809 38 | 182 11 | 4160 66 | 2267 65 |
| ..... | 723 00 | 723 00 | ..... | ..... | 723 00 | ..... | 723 00 | 723 00 | 793 00 | 793 00 |
| ..... | 1250 00 | 1250 00 | ..... | ..... | 1250 00 | ..... | ..... | 1250 00 | 447 46 | 447 46 |
| 429 69 | ..... | 327 89 | 107 00 | 434 89 | ..... | 20 00 | 414 89 | ..... | 551 65 | 499 31 |
| 1490 76 | 1920 45 | 1415 91 | 56 95 | 1472 86 | 1907 75 | 705 00 | 767 86 | 1195 45 | 1461 98 | 860 98 |
| 1457 10 | ..... | 1457 10 | ..... | 1457 10 | ..... | 200 00 | 1257 10 | ..... | 1172 15 | 1007 85 |
| 894 11 | ..... | 894 11 | ..... | 894 11 | ..... | 200 00 | 694 11 | ..... | 1054 72 | 896 36 |
| 1292 15 | 3643 36 | 1292 15 | ..... | 1292 15 | 3643 36 | 353 00 | 940 15 | 2891 36 | 1166 60 | 906 94 |
| ..... | 4003 31 | 2716 04 | 986 09 | ..... | 3702 13 | 1668 60 | 2033 53 | 2334 71 | 4202 83 | 2416 07 |
| ..... | 438 50 | 438 50 | ..... | ..... | 438 50 | ..... | 438 50 | 438 50 | 403 87 | 403 87 |
| ..... | 1600 00 | 1600 00 | ..... | ..... | 1600 00 | ..... | ..... | 1600 00 | 1346 34 | 1336 14 |
| 677 02 | ..... | 493 00 | 208 68 | 701 68 | ..... | 50 00 | 651 68 | ..... | 1177 93 | 1007 93 |
| 1289 00 | 1966 02 | 950 00 | 360 77 | 1310 77 | 2012 45 | 200 00 | 1110 77 | 1716 02 | 1374 72 | 1218 66 |
| 579 00 | ..... | 579 00 | ..... | 579 00 | ..... | 3 75 | 575 25 | ..... | 573 20 | 564 65 |
| 822 70 | ..... | 770 50 | 18 00 | 788 50 | ..... | 475 00 | 313 50 | ..... | 737 38 | 304 38 |
| 679 50 | 2078 20 | 609 50 | 13 50 | 623 00 | 1990 50 | 45 00 | 578 00 | 1554 45 | 580 67 | 554 57 |
| ..... | 3971 44 | 1796 22 | 743 54 | ..... | 2539 76 | 1247 56 | 1292 20 | 1923 88 | 3403 48 | 2115 38 |

APPENDIX F.—Schedule shewing Return of Fees and Emoluments of the

| County or District. | County Town. | Office. | Officer. | Amount earned. | Salary paid by the Government. |
|---|---|---|---|---|---|
| | | | | $ c. | $ c. |
| Lambton.—*Con*... | Sarnia ..... ... | Surrogate Judge..... ..... | Judge Robinson..... | 400 50 | ..... |
| | | Local Master..... | " ..... | 39 94 | ..... |
| | | County Attorney..... | J. P. Bucke ..... | 609 06 | ..... |
| | | Clerk of the Peace... ..... | " ..... | 1317 40 | ..... |
| | | Local Legistrar..... | W. R. Gemmill ..... | 189 50 | 675 00 |
| | | County Court Clerk..... . | " ..... | 574 25 | ..... |
| | | Surrogate Registrar.... ... | " ..... | 799 09 | ..... |
| Lanark .... .... | Perth ..... | Sheriff..... ..... | Jas. Thompson..... | 1717 86 | ..... |
| | | Surrogate Judge..... | Judge Senkler..... | 308 80 | .. ..... |
| | | Local Master..... ..... | " ..... | 409 90 | ..... |
| | | County Attorney..... | E. G. Malloch ..... | 355 54 | ..... |
| | | Clerk of the Peace..... | " ..... | 539 76 | ..... |
| | | Local Registrar ..... | Charles Rice ..... | 232 25 | 675 00 |
| | | County Conrt Clerk..... | " ..... | 422 25 | ..... |
| | | Surrogate Registrar.. ..... | " ..... | 682 95 | ..... |
| Leeds and Grenville..... | Brockville..... | Sheriff ... ..... | James Smart ..... | 4039 29 | ..... |
| | | Surrogate Registrar.. ..... | Judge Macdonald . .. | Commuted at | |
| | | Local Master.... ..... | J. D. Buell..... | 248 48 | ..... |
| | | Deputy Registrar..... | " ..... .... | 128 65 | ..... |
| | | County Attorney..... | " ..... | 448 93 | ..... |
| | | Clerk of the Peace..... | " ..... | 835 25 | ..... |
| | | Deputy Clerk of the Crown | S. Reynolds..... | 316 18 | 500 00 |
| | | County Courty Clerk. ..... | " ..... | 684 87 | ..... |
| | | Surrogate Registrar..... | " ..... ..... | 1527 36 | ..... |
| Lennox and Addington..... | Napanee..... .. | Sheriff ..... ..... | O. T. Pruyn..... | 2459 26 | ..... |
| | | Surrogate Judge..... | Judge Wilkinson .... | Commuted at | |
| | | Local Master..... | S. S. Lazier..... ... | 536 50 | ..... |
| | | County Attorney..... .... | A. L. Mordon ..... | 187 17 | ..... |
| | | Clerk of the Peace..... | " ..... | 648 64 | ..... |
| | | Local Registrar..... | W. P. Deroche ..... | 253 6 | 600 00 |

different County Judicial Officers in the Province of Ontario, etc.—*Continued.*

| Total Earnings and Salary. | Total Earnings and Salary by officer in all his offices. | Amount received for present year. | Amount received for previous year. | Total receipts. | Total receipts by officer from all his offices. | Amount disbursed. | Net amount received. | Net amount due to or received by officer by virtue of all his offices. | Average of gross earnings for years 1886 to 1890, both inclusive. | Average of net amount due to or received by officer during these years. |
|---|---|---|---|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 400 50 | .... ... | 400 50 | ..... | 400 50 | ..... | ..... | 400 50 | ..... | 363 80 | 363 80 |
| 39 94 | 440 44 | 39 94 | .... .. | 39 94 | 440 44 | ..... | 39 94 | 440 44 | 126 50 | 126 50 |
| 609 06 | ..... | 395 55 | 364 50 | 760 05 | ..... | 7 00 | 753 05 | ..... | 812 26 | 804 09 |
| 1317 40 | 1926 46 | 1217 70 | 97 10 | 1314 80 | 2074 85 | 8 36 | 1306 44 | 1911 10 | 1349 17 | 1337 58 |
| 864 50 | ..... | 864 50 | ... .... | 864 50 | ..... | 10 00 | 854 50 | ..... | 943 59 | 931 99 |
| 574 25 | .. ... . | 574 25 | ..... | 574 25 | .... ... | 15 00 | 559 25 | ..... | 572 62 | 558 02 |
| 799 00 | 2237 75 | 799 00 | ..... | 799 00 | 2237 75 | 20 00 | 779 00 | 2192 75 | 660 28 | 645 48 |
| ..... | 1717 86 | 1172 80 | 387 79 | ..... | 1560 59 | 559 81 | 1000 78 | 1158 05 | 1609 75 | 1119 97 |
| 308 80 | ..... | 308 80 | ..... | 308 80 | ..... | ..... | 308 80 | ..... | 449 46 | 449 46 |
| 409 90 | 718 70 | 161 91 | 263 12 | 425 03 | 733 83 | ..... | 425 03 | 718 70 | 299 37 | 296 99 |
| 255 54 | .. .... | 297 36 | 46 03 | 343 39 | ..... .. | 30 00 | 313 39 | ..... | 545 82 | 501 70 |
| 539 76 | 895 30 | 276 06 | 239 76 | 515 82 | 859 21 | 55 00 | 460 82 | 810 30 | 518 69 | 488 60 |
| 907 25 | ..... | 894 80 | 5 00 | 899 80 | ..... | 3 50 | 896 30 | ..... | 854 48 | 846 37 |
| 422 25 | ..... | 293 05 | 79 65 | 372 70 | ..... | 3 00 | 369 70 | ..... | 367 04 | 356 07 |
| 682 95 | 2012 45 | 600 50 | 107 85 | 708 35 | 1980 85 | 13 75 | 694 60 | 1992 20 | 549 15 | 535 73 |
| ..... | 4039 29 | 3199 15 | 638 76 | ..... | 3837 91 | 1139 02 | 2698 89 | 2900 27 | 3746 89 | 2628 83 |
| ..... | 480 00 | 480 00 | ..... | ..... | 480 00 | .. .... | ..... .. | 480 00 | 646 35 | 646 36 |
| 248 48 | ..... | 105 05 | 135 22 | 240 27 | ..... | ..... | 240 27 | ..... | 288 46 | 279 56 |
| 128 65 | ..... | 85 46 | ..... | 85 46 | ..... . | ..... | 85 46 | ..... .. | 128 25 | 128 25 |
| 448 93 | .. ..... | 297 89 | 122 34 | 420 23 | ..... | ..... | 420 23 | ..... | 336 68 | 336 38 |
| 835 25 | 1661 31 | 507 86 | 282 44 | 790 30 | 1536 26 | 110 79 | 679 51 | 1550 52 | 784 01 | 670 89 |
| 816 18 | ..... | 816 18 | ..... | 816 18 | ..... . | 30 00 | 786 18 | ..... | 726 53 | 716 03 |
| 684 87 | ..... | 684 87 | ..... | 684 87 | ..... . | 14 00 | 670 87 | ..... | 671 07 | 654 96 |
| 1527 36 | 3028 41 | 1527 36 | 38 15 | 1565 51 | 3066 56 | 84 63 | 1480 88 | 2899 78 | 984 38 | 929 65 |
| ..... | 2459 26 | 1723 58 | 491 91 | ..... | 2215 49 | 1317 46 | 898 03 | 1141 80 | 2358 21 | 942 89 |
| ..... | 400 00 | ..... | ..... | ..... | 400 00 | ..... | ..... | 400 00 | 296 68 | 296 68 |
| 536 50 | ..... | 410 00 | 65 00 | 475 00 | ..... | 75 00 | 400 00 | 461 50 | 536 10 | 461 10 |
| 187 17 | ..... | 98 17 | 14 33 | 112 50 | ..... | 8 00 | 104 52 | ..... | 119 10 | 110 70 |
| 648 64 | 835 81 | 375 64 | 256 62 | 632 26 | 744 76 | 64 50 | 567 76 | 763 31 | 620 59 | 549 99 |
| 853 60 | ..... | 813 90 | 18 90 | 832 80 | ..... | 29 50 | 803 30 | ..... | 792 38 | 780 62 |

APPENDIX F.—Schedule shewing Return of Fees and Emoluments of the

| COUNTY OR DISTRICT. | COUNTY TOWN. | OFFICE. | OFFICER. | Amount earned. | Salary paid by the Government. |
|---|---|---|---|---|---|
| | | | | $ c. | $ c. |
| Lennox and Addington—*Con.* .. | Napanee ..... | County Court Clerk ..... | W. P. Deroche ..... | 373 40 | ..... |
| | | Surrogate Registrar..... | " ..... | 424 30 | ..... |
| Lincoln ..... | St. Catharines. | Sheriff ..... | Thomas C. Dawson.. | 2485 52 | ..... |
| | | Surrogate Judge..... | Judge Senkler..... | Commuted at | |
| | | Local Master..... | F. W. McDonald.... | 759 08 | ..... |
| | | Deputy Registrar..... | " .... | 306 30 | ..... |
| | | County Attorney ..... | John McKeown..... | 330 00 | ..... |
| | | Clerk of the Peace..... .. | " ..... | 1299 13 | .. ..... |
| | | Deputy Clerk of the Crown | J. Clench..... | 255 06 | 450 00 |
| | | County Court Clerk ..... | " ..... | 499 71 | ..... |
| | | Surrogate Registrar..... | " ..... | 702 65 | ..... |
| Manitoulin ..... | Gore Bay ..... | District Court Clerk..... | William S. Francis .. | 74 35 | 250 00 |
| | | Surrogate Registrar..... | " .. | 14 69 | ..... |
| Middlesex..... | London ..... | Sheriff ..... ..... | William Glass. .... | 4361 69 | ..... |
| | | Surrogate Judge..... | Judge Elliott..... | Commuted at | |
| | | " ..... | " Davis ..... | ..... | 200 00 |
| | | Local Master ..... . .... | James Shanly ..... | 905 24 | ..... |
| | | Deputy Registrar..... | " ..... | 524 55 | ..... |
| | | County Attorney ..... | Chas. Hutchison..... | 2084 24 | ..... |
| | | Clerk of the Peace.. ..... | " ..... | 1632 64 | ..... |
| | | Deputy Clerk of the Crown | John Macbeth..... | 504 70 | 500 00 |
| | | County Court Clerk ..... | " ..... | 1688 45 | ..... |
| | | Surrogate Registrar..... | " ..... | 2191 20 | ..... |
| Muskoka ..... | Bracebridge ... | Sheriff ..... ..... | James W. Bettes .... | 1555 34 | 500 00 |
| | | Surrogate Judge..... | Judge Mahaffy ..... | 60 50 | ..... |
| | | Local Master..... | " ..... | 113 10 | ..... .. |
| | | District Attorney..... | Thomas Johnson..... | 596 40 | ..... |
| | | Clerk of the Peace..... | " ..... | 326 10 | ..... |
| | | Local Registrar..... | Isaac Huber..... | 54 28 | ..... |
| | | District Court Clerk ..... | " ..... | 54 45 | 500 00 |
| | | Surrogate Registrar..... | " ..... | 118 18 | ..... |

different County Judicial Officers in the Province of Ontario.—*Continued.*

| Total Earnings and Salary. | Total Earnings and Salary by officer in all his offices. | Amount received for present yerr. | Amount received for previous year. | Total receipts. | Total receipts by officer from all his offices. | Amount disbursed. | Net amount received. | Net amount due to or received by officer by virtue of all his offices. | Average of gross earnings for years 1886 to 1890, both inclusive. | Average of net amount due to or received by officer during these years. |
|---|---|---|---|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 373 40 | ..... | 348 10 | 101 86 | 449 96 | ..... | 15 40 | 434 56 | ..... | 416 61 | 410 95 |
| 424 30 | 1651 30 | 414 70 | ..... .. | 414 70 | 1697 46 | 12 10 | 402 60 | 1594 30 | 359 56 | 351 01 |
| ..... | 2485 52 | 1512 66 | 802 46 | ..... | 2615 12 | 739 36 | 1875 76 | 1746 16 | 2747 79 | 1707 41 |
| ..... | 556 00 | 566 00 | ..... | ..... | 566 00 | ..... | ..... | 566 00 | 374 02 | 374 02 |
| 759 08 | ..... | 519 10 | 278 50 | 797 60 | ..... | 12 00 | 785 60 | ..... ... | 820 38 | 790 40 |
| 306 30 | 1065 38 | 146 82 | 84 94 | 231 76 | 1029 36 | ..... | 231 86 | 1053 38 | 374 30 | 466 30 |
| 330 00 | ..... | 330 00 | ..... | 330 00 | .... .. | 52 43 | 277 57 | ..... | 373 96 | 320 06 |
| 1299 13 | 1629 13 | 1044 98 | .... ... | 1044 98 | 1374 98 | 216 11 | 728 87 | 1360 59 | 1174 32 | 985 77 |
| 705 06 | ..... | 687 86 | 60 70 | 748 56 | ..... | 25 77 | 722 79 | ..... | 754 06 | 743 69 |
| 499 71 | ..... | 407 43 | 157 30 | 564 73 | .... ... | 5 00 | 559 73 | ..... | 507 71 | 501 00 |
| 702 65 | 1907 42 | 699 75 | 8 35 | 708 10 | 2021 39 | 11 53 | 696 57 | 1865 12 | 610 37 | 557 13 |
| 324 35 | ..... | 324 35 | ..... | 324 35 | ..... | ..... | 324 35 | ..... | *. ..... | *..... .. |
| 14 69 | 339 04 | 14 69 | ... .... | 14 69 | 339 04 | 10 50 | 4 19 | 328 54 | *..... | *..... |
| ..... | 4361 64 | 3892 01 | 859 15 | ..... | 4751 16 | 1836 00 | 2915 16 | 2525 64 | 5124 86 | 2509 92 |
| .. .. .. | 1000 00 | 1000 00 | ..... | ..... | 1000 00 | ..... | ..... . | 1000 00 | 1277 50 | 1277 50 |
| ..... | 200 00 | 100 00 | ..... | ..... | 100 00 | ..... | ..... | 100 00 | ..... | ..... |
| 905 24 | ..... | 252 31 | 150 00 | 402 31 | ..... | 31 00 | 371 31 | ..... | 1228 21 | 1133 54 |
| 524 55 | 1429 79 | 524 55 | ..... | 524 55 | 926 86 | 42 00 | 482 55 | 1356 79 | 691 62 | 541 47 |
| 2084 24 | ..... | 1214 02 | 1017 65 | 2231 67 | ..... | 426 67 | 1805 00 | ..... | 2197 72 | 1892 85 |
| 1632 64 | 3716 88 | 1037 53 | 859 95 | 1897 48 | 4129 15 | 457 55 | 1439 43 | 2832 66 | 1980 47 | 1460 09 |
| 1004 70 | ..... | 925 90 | 58 40 | 984 30 | ..... | 320 00 | 664 30 | ..... | 1237 00 | 875 82 |
| 1688 45 | .... ... | 1632 95 | 11 65 | 1644 69 | ..... | 320 00 | 1324 60 | ..... | 2051 20 | 1690 31 |
| 2191 20 | 4884 35 | 2191 20 | ..... | 2191 20 | 4820 10 | 320 00 | 1871 20 | 3924 35 | 1682 90 | 1321 91 |
| ..... | 2055 34 | 1429 15 | 237 27 | ..... . | 1666 42 | 529 29 | 1137 13 | 1526 05 | *..... | *..... |
| 60 50 | ..... | 60 50 | ..... | 60 50 | ..... | ..... | 60 50 | ..... | ..... | ..... ... |
| 113 10 | 173 60 | 113 10 | ... .... | 113 10 | 173 60 | 3 00 | 110 10 | 170 60 | *..... | *..... |
| 596 40 | ..... | 279 55 | 122 55 | 402 10 | ..... . | 19 00 | 383 10 | ..... | ..... .... | ..... |
| 326 10 | 922 50 | 210 22 | 150 00 | 360 22 | 762 32 | 129 85 | 230 37 | 773 65 | *..... | *..... |
| 554 28 | ..... | 554 28 | ..... | 554 28 | ..... | 5 00 | 549 28 | ..... | ..... | ..... |
| 54 45 | ..... | 54 45 | ..... | 54 45 | .... ... | 5 00 | 49 45 | ... .... | ..... | ..... |
| 118 18 | 726 91 | 118 18 | ..... | 118 18 | 726 91 | 3 23 | 114 95 | 713 68 | *... . ... | *..... |

* Not five years in office.

APPENDIX F.—Schedule shewing Return of Fees and Emoluments of the

| County or District. | County Town. | Office. | Officer. | Amount Earned. | Salary paid by the Government. |
|---|---|---|---|---|---|
| | | | | $ c. | $ c. |
| Norfolk | Simcoe | Sheriff | E. Deedes | 2573 58 | |
| | | Surrogate Judge | Judge Robb | 312 50 | |
| | | County Attorney | J. H. Ansley | 361 80 | |
| | | Clerk of the Peace | " | 1067 67 | |
| | | Local Master | C. C. Rapelge | 211 00 | |
| | | Local Registrar | " | 27 30 | 675 00 |
| | | County Court Clerk | " | 485 25 | |
| | | Surrogate Registrar | " | 717 37 | |
| Northumberland & Durham | Cobourg | Sheriff | I. O. Proctor | 3796 78 | |
| | | Surrogate Judge | Judge Benson | Commuted at | |
| | | Local Master | J. H. Dumble | 789 91 | |
| | | County Attorney | J. W. Kerr | 370 40 | |
| | | Clerk of the Peach | " | 989 66 | |
| | | Local Registrar | John Fisher | 297 40 | 750 00 |
| | | County Court Clerk | " | 807 49 | |
| | | Surrogate Registrar | " | 1497 25 | |
| Ontario | Whitby | Sheriff | J. F. Paxton | 3203 59 | |
| | | Surrogate Judge | Judge Burnham | Commuted at | |
| | | Local Master | Judge Dartnell | 542 32 | |
| | | County Attorney | J. E. Farewell | 635 70 | |
| | | Clerk of the Peace | " | 1492 16 | |
| | | Local Registrar | L. T. Barclay | 140 40 | 675 00 |
| | | County Court Clerk | " | 732 70 | |
| | | Surrogate Registrar | " | 882 85 | |
| Oxford | Woodstock | Sheriff | George Perry | 2036 26 | |
| | | Surrogate Judge | Judge Finkle | 727 60 | |
| | | Local Master | H. B. Beard, Q.C | 500 27 | |
| | | Deputy Registrar | " | 344 12 | |
| | | County Attorney | F. R. Ball, Q.C | 359 40 | |
| | | Clerk of the Peace | " | 848 10 | |

differerent County Judicial Officers in the Province of Ontario, etc.—*Continued.*

| Total Earnings and Salary. | Total Earnings and Salary by officer in all his offices. | Amount received for present year. | Amount received for previous years. | Totol receipts. | Total receipts by officer from all his offices. | Amount disbursed. | Net amount received. | Net amount due to or received by officer by virtue of all his offices. | Average of gross earnings for years 1886 to 1890, both inclusive. | Average of net amount due to or received by officer during these years. |
|---|---|---|---|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| ..... | 2575 58 | 1855 09 | 676 18 | .. .... | 2531 27 | 81376 14 | 1155 13 | 1197 44 | 2749 09 | 1579 43 |
| ..... | 312 50 | 312 50 | ..... | ..... | 312 50 | ..... | 312 50 | 312 50 | 234 30 | 234 30 |
| 361 80 | ..... | 361 80 | ..... | 361 80 | ..... | 32 08 | 329 72 | ..... | 388 68 | 361 74 |
| 1067 67 | 1429 57 | 1043 64 | ..... | 1043 64 | 1505 55 | 27 08 | 1016 56 | 1370 31 | 919 82 | 896 69 |
| 211 00 | ..... | 150 37 | 83 64 | 234 01 | ..... | 3 50 | 230 51 | ..... | 315 29 | 311 09 |
| 702 30 | ..... | 691 60 | 3 00 | 694 60 | ..... | 50 | 694 10 | ..... | 848 22 | 847 77 |
| 485 25 | ..... | 395 43 | 124 65 | 520 08 | ..... | 1 85 | 518 23 | ..... | 509 38 | 303 15 |
| 717 37 | 2115 52 | 615 82 | 102 50 | 718 32 | 2167 01 | 12 75 | 705 57 | 2097 32 | 523 99 | 515 33 |
| ..... | 3796 70 | 2010 01 | 884 10 | ..... | 2894 11 | 2590 07 | 304 04 | 1206 72 | 5439 21 | 2920 92 |
| ..... | 600 00 | 600 00 | ..... | 600 00 | ..... | ..... | 600 00 | ..... | 725 20 | 725 20 |
| ..... | 789 91 | 451 73 | ..... | ..... | 451 73 | ..... | 451 73 | 789 91 | 473 09 | 874 29 |
| 370 40 | ..... | 250 80 | 167 59 | 418 39 | ..... | 150 00 | 268 39 | ..... | 937 02 | 767 02 |
| 989 66 | 1360 06 | 639 41 | 421 95 | 1061 36 | 1479 75 | 250 00 | 811 36 | 960 06 | 1172 28 | 757 28 |
| 1047 40 | ..... | 870 45 | 123 80 | 994 25 | ..... | 171 00 | 823 25 | ..... | 1139 02 | 980 42 |
| 807 49 | ..... | 493 83 | 151 06 | 645 93 | ..... .. | 248 60 | 397 33 | ..... | 924 90 | 566 30 |
| 1497 25 | 3352 14 | 1091 85 | 349 25 | 1441 10 | 3081 28 | 222 00 | 1219 10 | 2710 54 | 1154 49 | 1017 68 |
| ..... | 3203 59 | 2148 32 | 518 12 | ..... | 2666 44 | 1564 68 | 1101 86 | 1639 01 | 3033 15 | 1353 96 |
| ..... | 540 00 | 540 00 | ..... | ..... | 540 00 | ..... | ..... | 540 00 | 528 30 | 528 30 |
| ..... | 542 32 | 542 32 | ..... | ..... | 542 32 | ..... | 542 32 | 542 32 | 578 83 | 564 53 |
| 635 70 | ..... | 539 08 | 274 60 | 813 68 | ..... | 148 90 | 664 78 | ..... | 783 21 | 615 46 |
| 1492 16 | 2127 86 | 964 77 | 513 70 | 1478 47 | 2292 15 | 357 85 | 1120 62 | 1621 11 | 1388 42 | 1083 19 |
| 815 40 | ..... | 815 40 | ..... | 815 40 | ..... | 12 00 | 803 40 | ..... | 877 82 | 860 42 |
| 732 70 | ..... | 715 70 | 13 80 | 729 50 | ..... . | 14 90 | 715 50 | ..... | 691 42 | 672 13 |
| 882 85 | 2430 95 | 882 85 | ..... | 882 75 | 2427 75 | 45 00 | 837 85 | 2359 95 | 895 97 | 838 07 |
| ..... | 2036 26 | 1392 54 | 692 21 | ..... | 2084 75 | 1208 11 | 876 64 | 828 15 | 2672 65 | 1542 21 |
| ..... | 727 60 | 727 60 | ..... | ..... | 727 60 | ..... | 727 60 | 727 60 | 623 90 | 623 90 |
| 500 27 | ..... | 500 27 | ..... | 500 27 | ..... | ..... | 500 27 | ..... | 429 70 | 429 70 |
| 344 12 | 844 39 | 334 12 | ..... | 334 12 | 834 39 | ..... | 334 12 | 844 39 | 284 59 | 285 59 |
| 359 40 | ..... | 245 90 | 63 00 | 308 90 | ..... | 14 00 | 294 90 | ..... .... | 349 24 | 329 64 |
| 849 10 | 1207 50 | 564 55 | 300 08 | 864 63 | 1173 53 | ..... | 864 63 | 1193 50 | 915 90 | 902 86 |

APPENDIX F.—Schedule shewing Return of Fees and Emoluments of the

| County or District. | County Town. | Office. | Officer. | Amount Earned. | Salary paid by the Government. |
|---|---|---|---|---|---|
| | | | | $ c. | $ c. |
| Oxford—*Con.* .... | Woodstock .... | Deputy Clerk of the Crown | James Canfield ..... | 436 00 | 450 00 |
| | | County Court Clerk ..... | " ..... | 693 05 | ..... |
| | | Surrogate Registrar..... | " ..... | 1373 10 | ..... |
| Parry Sound..... | Parry Sound... | Sheriff ..... .. ..... | Henry Armstrong ... | 1618 36 | 500 00 |
| | | Surrogate Judge ..... | Judge Mahaffy ..... | 13 10 | ..... |
| | | Local Master ..... | See under Muskoka. | | |
| | | District Attorney ..... | | | |
| | | Clerk of the Peace..... | | | |
| | | Local Registrar ... ..... | R. H. Stewart ..... | 67 00 | ..... |
| | | District Court Clerk ..... | " ..... | 15 15 | 600 00 |
| | | Surrogate Registrar ..... | " ..... | 41 05 | .... .. |
| Peel ..... | Brampton .... | Sheriff ..... ..... | Robert Broddy ..... | 2433 84 | ..... |
| | | Surrogate Judge..... | Judge Scott ..... | commuted at | |
| | | Local Master ..... | " ..... | 133 30 | ..... |
| | | County Attorney . .. . .. | W. H. McFadden.... | 267 40 | ..... |
| | | Clerk of the Peace ..... | " .... | 821 01 | ..... |
| | | Local Registrar ..... | J. A. Austin ..... | 134 05 | 600 00 |
| | | County Court Clerk ..... | " ..... | 326 40 | ..... |
| | | Surrogate Registrar ..... | " ..... | 803 78 | .... ... |
| Perth ..... .. | Stratford..... | Sheriff ..... ... | John Hossie ..... | 2698 88 | ..... |
| | | Surrogate Judge ..... | Judge Woods..... | 772 80 | ..... |
| | | Local Master ..... | John E. Harding, Q.C. | 146 00 | ..... |
| | | County Attorney... ..... | John Idington, Q.C.. | 400 21 | ..... |
| | | Clerk of the Peace.... ... | " .. | 741 18 | ..... |
| | | Local Registrar..... | Jas. McFadden..... | 1029 00 | 675 00 |
| | | County Court Clerk ..... | " .... . | 594 25 | ..... |
| | | Surrogate Registrar..... | " ..... | 1281 15 | ..... |
| Peterborough..... | Peterborough.. | Sheriff ..... .... | Jas. A. Hall ..... | 2346 98 | ..... |
| | | Surrogate Judge..... | Judge Weller..... | 1212 50 | ..... |

different County Judicial Officers in the Province of Ontario, etc.—*Continued.*

| Total Earnings and Salary. | Total Earnings and Salary by officer in all his offices. | Amount received for present year. | Amount received for previous years. | Total receipts. | Total receipts by officer from all his offices. | Amount disbursed. | Net amount received. | Net amount due to or received by officer by virtue of all his offices. | Average of gross earnings for years 1886 to 1890, both inclusive. | Average of net amount due to or received by officer during these years. |
|---|---|---|---|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 886 00 | ..... | 661 50 | 215 00 | 876 50 | ..... | 48 00 | 828 50 | ..... | 938 33 | 907 00 |
| 693 05 | ..... | 529 00 | 263 00 | 792 00 | ..... | 9 37 | 782 63 | ..... | 828 97 | 812 57 |
| 1373 10 | 2952 15 | 975 00 | 341 00 | 1316 00 | 2984 50 | 87 00 | 1229 00 | 2807 78 | 1159 25 | 1125 91 |
| ..... | 2118 36 | 1462 55 | 497 92 | ..... | 1960 47 | 725 65 | 1234 82 | 1392 71 | *..... | ..... |
| ..... | 13 10 | 13 10 | .... .. | ..... | 13 10 | ..... | 13 10 | 13 10 | *.. ..... | ..... |
| 667 00 | ..... | 667 00 | ..... | 667 00 | ..... | ..... | 667 00 | ..... | *..... | ..... |
| 15 15 | ..... | 15 15 | ..... | 15 15 | ..... | ..... | 18 15 | ..... | . ..... | ..... |
| 41 05 | 723 20 | 41 05 | ..... | 41 05 | 723 20 | ..... | 41 05 | 723 20 | ..... .... | ..... |
| ..... | 2433 84 | 2080 24 | 434 79 | ..... | 2515 03 | 1239 40 | 1375 63 | 1194 44 | 2494 49 | 1281 57 |
| 240 00 | ..... | 240 00 | ..... | 240 00 | ..... | ..... | 240 00 | ..... | 340 27 | 340 27 |
| 133 30 | 373 30 | 61 30 | ..... | 61 30 | 301 30 | ..... | 61 30 | 373 30 | 293 41 | 285 41 |
| 267 40 | ..... | 247 80 | 32 20 | 280 00 | ..... | 10 00 | 270 00 | ..... | 227 41 | 215 41 |
| 812 01 | 1079 41 | 714 51 | 342 20 | 1056 71 | 1336 71 | 15 00 | 1041 71 | 1054 41 | 814 30 | 792 30 |
| 734 05 | .. ..... | 734 05 | ..... | 734 05 | ..... | 33 85 | 700 20 | ..... | 737 15 | 701 16 |
| 326 40 | ..... | 315 75 | 9 45 | 325 20 | .... | 9 60 | 315 60 | ..... | 335 49 | 317 07 |
| 803 78 | 1864 23 | 802 88 | 2 10 | 804 98 | 1864 23 | 13 15 | 791 83 | 1807 63 | 648 88 | 628 05 |
| ..... | 2698 88 | 1987 25 | 645 42 | ..... | 2632 67 | 1206 47 | 1426 20 | 1492 41 | 3524 57 | 2223 58 |
| 772 80 | ..... | 772 80 | ..... | 772 80 | ..... | ..... | 772 80 | 772 80 | 630 48 | 630 48 |
| 146 00 | ..... | 146 00 | ..... | ..... | 146 00 | ..... | 146 00 | 146 00 | *Only from date of appointment. | |
| 400 21 | ..... | 325 61 | 40 00 | 365 61 | ..... | 12 21 | 353 40 | ..... | 584 16 | 556 17 |
| 741 18 | 1141 39 | 444 92 | 318 42 | 763 34 | 1128 95 | 289 15 | 474 19 | 840 03 | 727 71 | 446 51 |
| 1704 00 | ..... | 1660 85 | ..... | 1660 85 | ..... | 150 00 | 1510 85 | ..... | 1273 79 | 1132 99 |
| 594 25 | ..... | 594 25 | 102 10 | 696 35 | ..... .. | 150 00 | 546 35 | ..... | 667 01 | 537 01 |
| 1281 15 | 3579 40 | 1275 50 | ..... | 1275 50 | 3632 70 | 200 00 | 1075 50 | 3079 40 | 980 00 | 810 00 |
| ..... | 2346 98 | 2216 76 | 242 34 | ..... | 2459 10 | 480 90 | 1978 20 | 1866 08 | 2172 56 | 1735 18 |
| 1212 50 | ..... | 1212 50 | ..... | 1212 50 | ..... | ..... | 1212 50 | ..... | 467 20 | 467 20 |

* Not five years in office.

APPENDIX F.—Schedule shewing Return of Fees and Emoluments of the

| County or District. | County Town. | Office. | Officers. | Amount Earned. | Salary paid by the Government. |
|---|---|---|---|---|---|
| | | | | $ c. | $ c. |
| Peterboro' *Con.* | Peterboro' | Local Master | Judge Weller | 311 30 | |
| | | County Attorney | Robert E. Wood | 304 00 | |
| | | Clerk of the Peace | " | 912 43 | |
| | | Local Registrar | John Maloney | 365 05 | 675 00 |
| | | County Court Clerk | " | 560 43 | |
| | | Surrogate Registrar | " | 693 20 | |
| Prescott & Russell | L'Orignal | Sheriff | Albert Hagar | 2786 78 | 500 00 |
| | | Surrogate Judge | Judge O'Brian | 268 00 | |
| | | Local Master | " | 67 00 | |
| | | County Attorney | John Maxwell | 238 74 | |
| | | Clerk of the Peace | " | 821 00 | |
| | | Local Registrar | John Fraser | 77 00 | 675 00 |
| | | County Court Clerk | " | 331 90 | |
| | | Surrogate Registrar | " | 548 28 | |
| Prince Edward | Picton | Sheriff | Jas. Gillespie | 1565 01 | 200 00 |
| | | Surrogate Judge | Judge Merrill | 198 00 | |
| | | Local Master | Nehemiah Gilbert | 269 80 | |
| | | County Attorney | Philip Low, Q.C. | 76 65 | |
| | | Clerk of the Peace | " | 544 58 | |
| | | Local Registrar | John Twigg | 156 83 | 600 00 |
| | | County Court Clerk | " | 479 97 | |
| | | Surrogate Registrar | " | 432 91 | |
| Rainy River | Rat Portage | Sheriff | Wm. H. Carpenter | 823 14 | 1000 00 |
| | | Surrogate Judge | Judge Hamilton | 9 00 | |
| | | Local Master | See under Thunder Bay. | | |
| | | District Attorney | | | |
| | | Clerk of the Peace | | | |
| | | District Court Clerk | Frank J. Apjohn | 42 40 | 650 00 |
| | | Surrogate Registrar | " | 23 40 | |

different County Judicial Officers in the Province of Ontario, etc.—*Continued.*

| Total Earnings and Salary. | Total Earnings and Salary by officer in all his offices. | Amount received for present year. | Amount received for previous years. | Total receipts. | Total receipts by officer from all his offices. | Amount disbursed. | Net amount received. | Net amount due to or received by officer by virtue of all his offices. | Average of gross earnings for years 1886 to 1890, both inclusive. | Average of net amount due to or received by officer during these years. |
|---|---|---|---|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 311 30 | 1523 80 | 311 30 | ..... | 311 30 | 1523 80 | ..... | 311 30 | 1523 80 | 522 16 | 522 16 |
| 304 00 | ..... | 217 00 | 85 50 | 302 50 | ..... | 8 00 | 294 50 | ..... | 208 62 | 203 31 |
| 912 43 | 1216 43 | 540 77 | 380 53 | 912 30 | 1223 80 | 21 00 | 900 30 | 1117 43 | 789 63 | 772 39 |
| 1040 05 | ..... | 1040 05 | ..... | 1040 05 | ..... | 80 00 | 960 05 | ..... | 871 21 | 800 21 |
| 560 43 | ..... | 560 43 | ..... | 560 43 | ..... | 90 00 | 470 43 | ..... | 727 38 | 468 38 |
| 693 20 | 2293 68 | 693 20 | 2293 68 | 693 20 | 2293 68 | 80 00 | 913 20 | 2043 68 | 451 67 | 411 67 |
| ..... | 3286 78 | 2358 15 | 652 10 | ..... | 3010 25 | 908 02 | 2102 23 | 2378 76 | 2524 50 | 1966 23 |
| 268 00 | ..... | 268 00 | ..... | 268 00 | ..... | ..... | 268 00 | ..... | 249 80 | 249 80 |
| 67 00 | 335 00 | 43 00 | 19 30 | 62 30 | 330 30 | ..... | 62 00 | 335 00 | 133 98 | 133 98 |
| 238 74 | ..... | 238 74 | ..... | 238 74 | ..... | 52 00 | 186 74 | ..... | 181 75 | 140 48 |
| 821 00 | 1059 74 | 821 00 | ..... | 821 00 | 1059 74 | 20 00 | 801 90 | 987 74 | 833 83 | 852 27 |
| 752 00 | ..... | 752 00 | ..... | 752 00 | ..... | 20 00 | 732 00 | ..... | 774 88 | 761 55 |
| 331 90 | ..... | 313 05 | 52 48 | 365 53 | ..... | 40 00 | 325 53 | ..... | 293 81 | 270 51 |
| 548 28 | 1632 18 | 456 83 | 14 48 | 480 31 | 1597 84 | 80 00 | 400 31 | 1492 18 | 289 35 | 184 35 |
| ..... | 1765 01 | 1236 48 | 445 41 | ..... | 1680 89 | 981 92 | 698 97 | 783 09 | 1815 00 | 742 80 |
| ..... | 198 00 | 198 00 | ..... | ..... | 198 00 | ..... | ..... | 198 00 | 193 22 | 193 22 |
| ..... | 269 80 | 213 30 | 102 20 | ..... | 315 50 | ..... | 315 50 | 269 80 | 358 30 | 356 75 |
| 76 65 | ..... | 42 65 | 83 63 | 126 28 | ..... | 9 03 | 117 24 | ..... | 58 62 | 56 30 |
| 544 58 | 621 23 | 301 51 | 259 43 | 560 94 | 687 22 | 13 18 | 547 76 | 599 02 | 545 18 | 527 63 |
| 756 83 | ..... | 752 93 | ..... | 752 93 | ..... | ..... | 752 93 | ..... | 729 68 | 729 68 |
| 479 97 | ..... | 448 92 | 64 00 | 512 92 | ..... | ..... | 512 92 | ..... | 431 72 | 431 72 |
| 432 91 | 1669 71 | 432 71 | 13 80 | 446 51 | 1712 36 | ..... | 446 51 | 1669 71 | 381 35 | 381 35 |
| ..... | 1823 14 | 1423 14 | 326 22 | ..... | 1749 36 | 511 37 | 1237 99 | 1311 77 | 1508 08 | 1096 17 |
| ..... | 9 00 | 9 00 | ..... | ..... | 9 00 | ..... | ..... | 9 00 | ..... | ..... |
| 692 40 | ..... | 692 40 | ..... | 692 40 | ..... | ..... | 692 40 | ..... | 693 84 | 693 84 |
| 23 40 | 715 80 | 23 40 | ..... | 23 40 | 715 80 | ..... | 23 40 | 715 80 | | |

APPENDIX. F.—Schedule shewing Return of Fees and Emoluments of the

| County or District. | County Town. | Office. | Officers. | Amount Earned. | Salary paid by the Government. |
|---|---|---|---|---|---|
| | | | | $ c. | $ c. |
| Renfrew | Pembroke | Sheriff | (*Vacant*) | 3027 32 | |
| | | Surrogate Judge | Judge Deacon | commuted at | |
| | | Local Master | " | 45 59 | |
| | | County Attorney | J. H. Metcalfe | 307 20 | |
| | | Clerk of the Peace | " | 804 45 | |
| | | Local Registrar | A. Thompson | 48 00 | 600 00 |
| | | County Court Clerk | " | 405 20 | |
| | | Surrogate Registrar | " | 363 75 | |
| Simcoe | Barrie | Sheriff | O. J. Phelps | 5255 01 | |
| | | Surrogate Judge | Judge Ardagh | commuted at | |
| | | Local Master | J. R. Cotter | 775 30 | |
| | | Deputy Registrar | " | 707 65 | |
| | | County Attorney | " | 1042 75 | |
| | | Clerk of the Peace | " | 1481 96 | |
| | | Deputy Clerk of the Crown | J. McL. Stevenson | 598 18 | 500 00 |
| | | County Court Clerk | " | 1295 15 | |
| | | Surrogate Registrar | " | 1407 46 | |
| Stormont, Dundas and Glengarry | Cornwall | Sheriff | D. E. McIntyre | 3635 29 | |
| | | Surrogate Judge | Judge Pringle | 365 00 | |
| | | Local Master | " | 1647 13 | |
| | | County Attorney | James Dingwall | 343 78 | |
| | | Clerk of the Peace | " | 816 15 | |
| | | Local Registrar | Alex. E. McDonald | 59 80 | 750 00 |
| | | County Court Clerk | " | 865 40 | |
| | | Surrogate Registrar | " | 822 45 | |
| Thunder Bay | Port Arthur | Sheriff | Alex. W. Thompson | 1869 40 | 800 00 |
| | | Surrogate Judge | Judge Hamilton | 5 00 | |
| | | Local Master | " | 69 30 | |
| | | District Attorney | A. R. Lewis, Q.C. | 89 96 | |
| | | Clerk of the Peace | " | 256 95 | |

different County Judicial Officers in the Province of Ontario, Etc.—*Continued.*

| Total Earnings and Salary. | Total Earnings and Salary by officer in all his offices. | Amount received for present year. | Amount received for previous years. | Total receipts. | Total receipts by officer from all his offices. | Amount disbursed. | Net amount received. | Net amount due to or received by officer by virtue of all his offices. | Average of gross earnings for years 1886 to 1890, both inclusive. | Average of net amount due to or received by officer during these years. |
|---|---|---|---|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| ..... | 3027 32 | 3027 32 | 220 67 | ..... | 3247 99 | 1072 22 | 3175 77 | 1955 10 | 2622 64 | 1403 82 |
| 264 00 | ..... | 264 00 | ..... | 264 00 | ..... | ..... | 264 00 | ..... ..... | 110 52 | 110 52 |
| 45 59 | 309 59 | 45 59 | ..... | 45 59 | 309 59 | ..... | 45 59 | 309 59 | 101 01 | 100 16 |
| 307 20 | ..... | 307 20 | ..... | 307 20 | ..... | 8 00 | 299 20 | ..... | 208 67 | 194 69 |
| 804 45 | 1111 65 | 553 00 | 261 71 | 814 71 | 1121 41 | 42 62 | 772 09 | 1061 03 | 765 52 | 725 13 |
| 648 00 | ..... | 648 00 | ..... | 648 00 | ..... | 15 00 | 633 00 | ..... | 693 30 | 688 25 |
| 405 20 | ..... | 405 20 | ..... | 405 20 | ..... | 15 00 | 390 30 | ..... | 454 60 | 449 40 |
| 363 75 | 1416 95 | 363 75 | ..... | 363 75 | 1416 95 | 15 00 | 348 75 | 1371 95 | 231 66 | 224 46 |
| ..... | 5255 01 | 4804 28 | 968 32 | ..... | 5772 60 | 2197 05 | 3575 55 | 3057 96 | 6694 45 | 2550 94 |
| ..... | 479 00 | ..... | ..... | ..... | 479 00 | ..... | 479 00 | 479 00 | 669 06 | 669 06 |
| 775 30 | ..... | 775 30 | ..... | 775 30 | ..... | 35 00 | 740 30 | ..... | 931 98 | 938 38 |
| 707 65 | ..... | 707 65 | ..... | 707 65 | ..... | 28 00 | 679 65 | ..... | 620 62 | 594 02 |
| 1042 75 | ..... | 1042 75 | ..... | 1042 75 | ..... | 10 00 | 1032 75 | ..... | 897 17 | 831 03 |
| 1481 96 | 4007 66 | 1481 96 | ..... | 1481 96 | 4007 66 | 166 50 | 1315 46 | 3768 16 | 1701 17 | 1578 46 |
| 1098 18 | ..... | 1098 18 | ..... | 1098 18 | ..... | 130 02 | 968 16 | ..... | 1094 27 | 987 41 |
| 1295 15 | ..... | 1295 15 | ..... | 1295 15 | ..... | 165 09 | 1130 06 | ..... | 1334 91 | 1186 49 |
| 1407 48 | 3800 81 | 1407 48 | ..... | 1407 48 | 3800 81 | 179 44 | 1228 04 | 3326 26 | 1099 22 | 908 37 |
| ..... | 3635 29 | 2931 43 | 332 79 | ..... | 3264 22 | 1021 53 | 2242 69 | 2613 76 | 3645 38 | 2652 30 |
| 365 00 | ..... | 365 00 | ..... | 365 00 | ..... | ..... | 365 00 | ..... | 303 40 | 303 40 |
| 1647 13 | 2012 13 | 1538 48 | ..... | 1538 48 | 1903 48 | 48 25 | 1490 23 | 1963 88 | 1066 62 | 1058 97 |
| 343 78 | ..... | 305 78 | 171 20 | 476 98 | ..... | 20 00 | 456 98 | 1074 65 | 412 32 | 373 56 |
| 816 51 | 1160 29 | 553 51 | 326 97 | 880 48 | 1357 46 | 65 64 | 814 84 | ..... | 741 98 | 706 11 |
| 809 80 | ..... | 809 00 | ..... | 809 00 | ..... | 25 00 | 784 00 | ..... | 868 56 | 847 71 |
| 865 40 | ..... | 791 38 | 11 00 | 802 38 | ..... | ..... | 802 38 | ..... | 944 52 | 866 48 |
| 822 45 | 2497 65 | 822 45 | ..... | 822 45 | 2433 83 | 275 00 | 547 45 | 2197 65 | 571 72 | 417 07 |
| ..... | 2669 40 | 1966 27 | 300 28 | ..... | 2266 55 | 543 60 | 1722 95 | 2125 80 | 3084 86 | 1973 59 |
| 5 00 | ..... | ..... | ..... | 5 00 | ..... | ..... | 5 00 | ..... | 21 00 | 21 00 |
| 69 30 | 76 30 | 69 30 | 124 50 | 193 80 | 198 80 | 12 00 | 171 80 | 176 80 | 122 17 | 121 57 |
| 89 96 | ..... | 57 96 | 64 80 | 122 76 | ..... | ..... | 122 76 | ..... ..... | 258 83 | 258 83 |
| 256 95 | 346 91 | 171 86 | 158 57 | 330 43 | 453 19 | ..... ... | 330 43 | 346 91 | 352 71 | 342 20 |

APPENDIX F.—Schedule shewing Return of Fees and Emoluments of the

| County or District. | County Town. | Office. | Officers. | Amount Earned. | Salary paid by the Government. |
|---|---|---|---|---|---|
| | | | | $ c. | $ c. |
| Thunder Bay--*Con* | Port Arthur.... | Local Registrar..... | James Meek ..... | 45 85 | 600 00 |
| | | District Court Clerk... .. | " ..... | 239 85 | ..... |
| | | Surrogate Registrar..... | " ..... | 3 30 | ..... |
| Victoria..... ... | Lindsay..... | Sheriff ..... | John McLennan .... | 2671 39 | ..... |
| | | Surrogate Judge. .... .. | Judge Dean ..... | commuted at | |
| | | Local Master..... | " ..... | commuted at | |
| | | County Attorney ..... | A. P. Devlin ..... | 392 20 | ..... |
| | | Clerk of the Peace ..... | " ..... | 890 69 | ..... |
| | | Local Registrar..... | William Grace..... | 327 00 | 675 00 |
| | | County Court Clerk..... | " ..... | 517 25 | ..... |
| | | Surrogate Registrar..... | " ..... | 455 75 | ..... |
| Waterloo ..... | Berlin..... | Sheriff ..... . ..... | Moses Springer..... | 2457 79 | 100 00 |
| | | Surrogate Judge ..... | Judge Lacourse. .... | commuted at | |
| | | Local Master ..... | " ..... | commuted at | |
| | | County Attorney ..... | W. H. Bowlby ..... | 687 60 | ..... |
| | | Clerk of the Peace ..... | " ..... | 1312 68 | ... .... |
| | | Local Registrar..... | John McDougall .... | 229 00 | 1075 00 |
| | | County Court Clerk..... | " .... | 572 00 | ..... |
| | | Surrogate Registrar.. .. | A. J. Peterson ..... | 794 42 | ..... .. |
| Welland..... | Welland..... | Sheriff ..... | James Smith ..... | 2370 06 | ..... |
| | | Surrogate Judge ..... | Judge Baxter..... | 374 50 | ..... .. |
| | | Local Master..... ..... | " ..... | 108 86 | ..... .. |
| | | County Attorney ... .... | L. D. Raymond ..... | 275 60 | ..... |
| | | Clerk of the Peace..... | " ..... | 766 83 | ..... |
| | | Local Registrar..... | I. P. Wilson ..... | 244 40 | 1000 00 |
| | | County Court Clerk..... | " ..... | 428 60 | .. ..... |
| | | Surrogate Registrar..... | D. D'Everardo ..... | 788 64 | ..... |
| Wellington ..... | Guelph..... | Sheriff ..... | R. McKim ..... | 3002 10 | ..... |
| | | Surrogate Judge ..... | Judge Drew ..... .. | commuted at | |

different County Judicial Officers in the Province of Ontario, etc.—*Continued.*

| Total Earnings and Salary. | Total Earnings and Salary by officer in all his offices. | Amount received for present year. | Amount received for previous year. | Total receipts. | Total receipts by officer from all his offices. | Amount disbursed. | Net amount received. | Net amount due to or received by officer by virtue of all his offices. | Average of gross earnings for years 1886 to 1890, both inclusive. | Average of net amount due to or received by officer during these years. |
|---|---|---|---|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 645 85 | ..... | 645 88 | ..... | 645 85 | ..... | 100 00 | 545 85 | ..... | 779 85 | 562 14 |
| 239 85 | ..... | 239 85 | ..... | 239 85 | ..... | 39 30 | 200 55 | ..... | 480 37 | 367 71 |
| 3 30 | 889 00 | 3 30 | ..... | 3 30 | 889 00 | .. .... | 3 30 | 749 70 | 38 85 | 38 65 |
| ..... | 2671 39 | 2143 21 | 544 15 | ..... | 2687 36 | 601 00 | 2086 36 | 2070 39 | 2829 89 | 2269 72 |
| 500 00 | ..... | 500 00 | ..... | 500 00 | ..... | .... .. | 500 00 | ..... | 166 80 | 166 80 |
| 900 00 | 1400 00 | 900 00 | ..... | 900 00 | 1400 00 | ..... | 900 00 | 1400 00 | 251 23 | 251 23 |
| 392 20 | ..... | 218 40 | 181 31 | 399 71 | . .. .. | ..... | 399 71 | ..... | 285 06 | 283 40 |
| 890 69 | 1282 89 | 530 13 | 416 23 | 946 36 | 1346 07 | ..... | 946 36 | 1282 89 | 932 25 | 914 45 |
| 1002 00 | ..... | 1002 00 | ..... .. | 1002 00 | ..... | 15 00 | 987 00 | ..... | 912 24 | 885 84 |
| 517 25 | ..... | 517 25 | ..... | 517 25 | ..... | 15 00 | 502 25 | ..... | 517 40 | 500 90 |
| 455 75 | 1975 00 | 455 75 | ..... | 455 75 | 1075 00 | 15 00 | 440 75 | 1930 00 | 320 80 | 306 84 |
| ..... | 2557 79 | 2163 49 | 365 45 | ..... | 2528 94 | 952 61 | 1576 33 | 1605 18 | 2935 33 | 1734 16 |
| 704 00 | ..... | ..... | ..... | 704 00 | ..... | ..... | 704 00 | ..... | 628 70 | 628 70 |
| 591 00 | 1295 00 | ..... | ..... | 591 00 | 1295 00 | ..... | 591 00 | 1295 00 | 392 59 | 392 59 |
| 687 60 | ..... | 687 60 | 155 80 | 843 40 | ..... | 100 00 | 743 40 | ..... | 600 07 | 517 71 |
| 1312 68 | 2000 28 | 1312 69 | 68 00 | 1380 68 | 2224 08 | 300 00 | 1080 68 | 1600 28 | 1246 12 | 926 12 |
| 1304 00 | ..... | 1304 00 | ..... | 1304 00 | ..... | 50 00 | 1244 00 | ..... | 1321 95 | 1274 95 |
| 572 00 | 1876 00 | 572 00 | ..... | 572 00 | 1876 00 | 50 00 | 522 00 | 1776 00 | 372 07 | 314 07 |
| ..... | 794 42 | 794 42 | ..... | ..... | 794 42 | 136 00 | 658 42 | 658 42 | 935 91 | 809 47 |
| ..... | 2370 06 | 1805 55 | 378 18 | ..... | 2183 73 | 761 09 | 1422 64 | 1608 97 | 2507 46 | 1546 30 |
| 374 50 | .. ..... | 374 50 | ..... | 374 50 | ..... | ..... | 374 50 | ..... . | 444 95 | 444 95 |
| 108 86 | 483 36 | 59 94 | 44 70 | 104 64 | 479 14 | 5 00 | 99 64 | 478 36 | 180 51 | 173 61 |
| 275 60 | ..... | 215 60 | 123 00 | 338 60 | ..... | 21 00 | 317 60 | ..... | 296 54 | 299 34 |
| 746 83 | 1022 43 | 459 00 | 287 96 | 747 05 | 1085 65 | 33 05 | 714 00 | 968 38 | 779 34 | 751 14 |
| 1244 40 | ..... | 1193 40 | 36 30 | 1239 70 | .. ..... | 39 05 | 1200 65 | ..... | 1236 68 | 1201 62 |
| 428 60 | 1673 00 | 376 60 | 39 50 | 416 00 | 1655 70 | 22 00 | 394 00 | 1611 95 | 367 91 | 351 55 |
| ..... | 788 64 | 751 14 | 54 20 | ..... | 805 34 | 531 75 | 263 59 | 246 89 | 759 58 | 353 12 |
| ..... | 3002 10 | 2185 93 | 950 41 | ..... .. | 3136 34 | 1760 86 | 1375 48 | 1241 24 | *..... | ..... |
| ..... | 505 00 | 505 00 | ..... | ..... .. | 505 00 | ..... | ..... | 505 00 | 493 79 | 493 79 |

*Not five years in office.

APPENDIX F.—Schedule shewing Return of Fees and Emoluments of the

| COUNTY OR DISTRICT. | COUNTY TOWN. | OFFICE. | OFFICER. | Amount earned. | Salary paid by the Government. |
|---|---|---|---|---|---|
| | | | | $ c. | $ c. |
| Wellington—*Con.* | Guelph | Local Master | A. M. McKinnon | 1443 68 | |
| | | Deputy Registrar | " | 234 11 | |
| | | County Attorney | H. W. Peterson | 540 25 | |
| | | Clerk of the Peace | " | 2345 73 | |
| | | Deputy Clerk of the Crown | James Hough | 95 18 | 500 00 |
| | | County Court Clerk | " | 776 50 | |
| | | Surrogate Registrar | Alex. Mackenzie | 1298 65 | |
| Wentworth | Hamilton | Sheriff | Hon. A. McKellar | 5381 93 | |
| | | Surrogate Judge | Judge Sinclair | Commuted at | |
| | | Local Master and Deputy Registrar | J. E. O'Reilly | Commuted at | |
| | | County Attorney | John Crerar | 987 76 | |
| | | Clerk of the Peace | " | 1394 51 | |
| | | Deputy Clerk of the Crown | S. H. Ghent | 559 33 | 550 00 |
| | | County Court Clerk | " | 1319 88 | |
| | | Surrogate Registrar | " | 1905 53 | |
| York | Toronto | Sheriff | J. H. Widdifield | 8819 28 | |
| | | Surrogate Judge | Judge McDougall | 2852 50 | |
| | | " | Judge Morgan | | 666 00 |
| | | County Attorney | G. W. Badgerow | 5970 80 | |
| | | Clerk of the Peace | T. H. Bull | 4214 48 | |
| | | Surrogate Registrar | J. G. Brown | 4847 83 | |
| | | County Court Clerk | Hon. A. M. Ross | 2849 80 | |
| Toronto | Toronto | Sheriff | Fred Mowat | 18828 76 | |

different County Judicial Officers in the Province of Ontario, etc.—*Continued.*

| Total Earnings and Salary. | Total Earnings and Salary by officer in all his offices. | Amount received for present year. | Amount received for previous years. | Total receipts. | Total receipts by officer from all his offices. | Amount disbursed. | Net amount received. | Net amount due to or received by officer by virtue of all his offices. | Average of gross earnings for years 1886 to 1890, both inclusive. | Average of net amount due to or received by officer during these years. |
|---|---|---|---|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 1443 68 | ..... | 1138 43 | 307 25 | 1445 68 | ..... | 70 00 | 1375 68 | ..... | 1331 48 | 1312 78 |
| 234 11 | 1677 79 | 181 91 | 86 16 | 268 08 | 1714 76 | 7 50 | 260 58 | 1600 29 | 311 87 | 301 67 |
| 540 25 | ..... .. | 401 45 | 203 75 | 605 20 | ..... .. | 100 00 | 505 20 | ..... | 655 41 | 522 01 |
| 2345 73 | 2885 98 | 1587 53 | 777 56 | 2365 09 | 2970 29 | 500 00 | 1865 09 | 2285 98 | 2273 48 | 1720 07 |
| 595 18 | ..... | 591 18 | ..... | 591 18 | ..... | ..... | 591 18 | ..... | 618 01 | 617 60 |
| 776 50 | 1371 68 | 776 50 | ..... | 776 50 | 1371 68 | 523 18 | 253 32 | 844 50 | 880 45 | 460 85 |
| ..... | 1297 65 | 1297 65 | 235 37 | ..... | 1533 02 | 75 00 | 1458 02 | 1222 65 | 1144 97 | 1116 97 |
| ..... | 5381 93 | 4452 66 | 1382 41 | ..... | 5835 07 | 2979 43 | 2856 64 | 2402 50 | 5603 43 | 2726 39 |
| ..... | 1000 00 | 1000 00 | ..... | ..... | 1000 00 | ..... | ..... | 1000 00 | 1018 08 | 1018 08 |
| ..... | 3500 00 | 3500 00 | ..... | ..... | 3500 00 | ..... | ..... | 3500 00 | 1661 23 | 1661 23 |
| 987 76 | ..... | 987 76 | 175 00 | 1162 76 | ..... | 16 60 | 1146 16 | ..... | 1242 58 | 1209 84 |
| 1394 91 | 2382 27 | 1394 51 | ..... | 1394 51 | 2557 27 | 171 20 | 1223 31 | 2195 47 | 1202 89 | 1085 25 |
| 1009 33 | ..... | 1081 00 | 63 16 | 1144 16 | ..... | 41 55 | 1102 61 | ..... | 997 49 | 984 38 |
| 1319 88 | ..... | 1162 98 | 218 30 | 1381 28 | ..... | 251 45 | 1129 83 | ..... | 1564 18 | 1356 45 |
| 1905 53 | 4284 74 | 1875 63 | 41 25 | 1916 88 | 4442 32 | 262 66 | 1654 22 | 3729 08 | 1388 14 | 1188 01 |
| ..... | 8819 28 | 7176 56 | 1966 89 | ..... | 9143 45 | 3707 29 | 5436 16 | 5411 99 | *..... | ..... |
| ..... | 2852 50 | 2852 50 | ..... | ..... | 2852 50 | ..... | ..... | 2852 50 | 2304 44 | 2304 44 |
| .. .... | 666 00 | 666 00 | ..... | ..... | 666 00 | ..... | ..... | 666 00 | 666 00 | 666 00 |
| ..... | 5970 80 | 4619 60 | 1562 20 | ..... | 6181 80 | 813 98 | 5297 82 | 5096 82 | 5169 20 | 3933 24 |
| . ..... | 4214 48 | 3958 90 | 371 40 | ..... | 4330 30 | 961 19 | 3369 11 | 3253 29 | 3357 15 | 2716 25 |
| ..... . | 4847 83 | 4779 73 | 96 10 | ..... . | 4875 83 | 557 08 | 4318 75 | 4290 75 | 3954 41 | 3472 09 |
| ..... | 2849 80 | 2849 80 | ..... | ..... | 2849 80 | 1114 65 | ..... | 1735 15 | †..... | †..... |
| ..... | 18828 76 | 15692 13 | 3306 87 | ..... | 18999 00 | 10158 54 | 8840 46 | 8670 22 | *..... | ..... |

* Not five years in office. † Since date of appointment.

(No 59).

Return to an Order of the House of the twelfth day of March, 1890, shewing the lots, townships or other area, in the Electoral District of West Algoma, the timber of which has been sold. The dates when the same was sold; the names of the purchasers, and the prices paid. Shewing, also, what timber berths or other territory in the said district have been placed under license, or in respect of which permits to cut timber have been granted under the authority of the Province; the date when first placed under license, or permits first granted; the names of the original licensee or holder of the permit; the name of the present licensee or holder of the permit and the bonus *per* square mile received for each such berth or other territory. Presented to the Legislature 2nd May, 1891. Mr. *Meredith.* (*Not Printed.*)

# ANNUAL REPORT

OF THE

# INSPECTORS OF FACTORIES

FOR THE

# PROVINCE OF ONTARIO

# 1890.

*PRINTED BY ORDER OF THE LEGISLATIVE ASSEMBLY.*

*TORONTO:*
PRINTED BY WARWICK & SONS, 68 AND 70 FRONT STREET WEST.
1891.

# THIRD ANNUAL REPORT

OF THE

# INSPECTORS OF FACTORIES.

---

*To His Honor* Sir Alexander Campbell,
*Lieutenant-Governor of Ontario:*

The undersigned has the honor to transmit herewith the reports of the Inspectors of Factories for the year ending 31st December, 1890.

Very respectfully submitted,

JOHN DRYDEN,
*Minister of Agriculture.*

# THIRD ANNUAL REPORT

OF THE

# INSPECTORS OF FACTORIES.

## WESTERN DISTRICT.

To the Honorable the Minister of Agriculture :

Sir,—I have the honor to submit the following report of Factories' Inspection in the Western District of the Province for the year 1890 :

### Observance of the Law.

This year, as foreshadowed in my last report, in addition to inspecting the chief and more important places of my district, I have visited many of the smaller villages and isolated factories, which I had not previously been able to call at ; chiefly in lumber, staves, hoops and heading industries, and in the western portion of my district. In many of these factories, lumber excepted, I found an inclination to employ boys, without paying much attention to their age so long as they appeared sufficiently able-bodied to do the work required of them. These boys are chiefly employed by the stave-jointers in the yards, who work by contract and furnish their own help ; but in the Factories' Amendment Act, 1889, provision was made to meet such cases as these. From conversations I had with the contractors and with the first employers or occupiers, I feel that the evil will be discontinued. Some of these factories are out in the woods, three to six miles from a village or railway station, and the employers and men do not keep posted on legislation to the same extent that they would if they were in reach of the daily papers and the conversation of the travelling public. But they seem all the same to be willing to conform to the laws so far as they know them, and when I explained to the employers and contractors their liability for the illegal employment of children they promised to conform to the requirements of the Act.

In these manufactories some of the machinery is of a dangerous nature on account of its construction. Circular saws in operation at all times, and in all conditions of adaptation for use, are dangerous and require constant care on the part of the attendants, and even to all persons passing near such saws ; but in the stave and other wood-working industries the butting and the equalising saws overhang the frames on which they are operated, and thereby losing the protection the frame affords they are so exposed that there is danger of persons passing near,

running or falling against them. Frequently too when the saws are bright and running evenly it is difficult to know if they are in motion. It seems impossible to guard these saws absolutely; but the employers appear to be willing to adopt such precautions as are possible when it is pointed out to them what others using the same machines have done. Very few of these stave factories run all the year round, generally stopping through the winter months, as the buildings are, as a rule, little better than barns or saw-mills as regards keeping out the cold, and the steam arising from the steamed wood makes the atmosphere foggy and unpleasant to work in.

In factories generally previously inspected, I find the law is being faithfully observed in all respects with but a few unimportant exceptions, such as that a boy within a few months of fourteen years of age may occasionally be found at work without the employer having first procured from his parent a certificate of age, to show that he is actually twelve years old. But this condition of employment of children has had the effect of causing a great many employers to refuse to employ boys under fourteen years old, except in textile industries, where their help seems at present to be necessary.

As to working hours of protected persons, I know of no case where the legal working hours have been exceeded, except in the case I recently reported to you, where a firm working with the overtime permit allowed such of their females as wished, to work till 10 o'clock p.m. instead of dismissing them at 9 p.m., as the law requires. The object of this, as they wrote in reply to my letter warning them of their infraction of the Act, was that by working till 10 p.m. the employés were entitled to half a day's extra time, or otherwise quit at 8.30 and get only one-quarter day's extra pay. It was voluntary on the part of the females to work after 9 o'clock or go home; some preferred to remain. However, it will not occur again in that establishment.

Here a question arises naturally. Would it not be well to alter the law so as to make it optional with the females themselves, or those 18 years of age and upward, to decide for themselves on such a point as this? The period of overtime employment is limited to 36 nights a year, and then only under a permit from the Inspector. In many industries the work in process is dependent on male and female alike, and when the females cease work the males necessarily must cease also.

### Cleanliness in Factories.

Cleanliness is becoming more noticeable in many of the larger establishments, where the work is not of a dusty nature, and whitewashing the walls and ceilings is becoming more common. Some of it is done with whiting instead of lime, though the lime is better as being more absorbent and germicidal.

I find more or less dust in the weaving rooms of some of the cotton mills. On some visits the quantity seems to be unimportant, but on others it is excessive. The dust comes from the warp, which has either been over-sized, or the sizing has not been properly manipulated, through carelessness or lack of skill. Referring to a "Report on the effects of heavy sizing in cotton weaving on the health of the operators employed," presented to both Houses of the British Parliament in 1884, I find the following:

"Dust was a noticeable feature in most of the weaving sheds visited by us. We saw a very few sheds where the proportion of size was very great, in one case 200 lb. to 100 lb. of warp, and where nevertheless there was but little dust. This was due to special modes of preparing and putting on the size, some

of which are alleged to be trade secrets. But with these exceptions dust was found diffused through the atmosphere of all the weaving sheds we visited."

From this it will be seen that excessive dust is not a necessary accompaniment of cotton weaving. I may add a few remarks from the same report relative to the effect of the dust on the health of the operatives. A well qualified observer who gave his opinions before the Commission says:

"After due allowance has been made for climate and the rough and ready diet which most of these operatives have on the working days, there can be no doubt that the dust and moisture of the weaving sheds cause a good deal of mischief to these people either as the direct cause or as aggravating tendencies to rheumatism or lung disease where they exist."

The Commissioners say, referring to the foregoing:

"It is to the opinion expressed in the concluding words of his sentence that our own judgment inclines. We think that the balance of evidence is in favor of harm resulting, not to strong and vigorous constitutions, but to those that are weakly or that have tendencies to rheumatic or pulmonary disease; and that these form a considerable proportion of the factory population, few that know them will be disposed to doubt."

In speaking to the managers of cotton mills of the necessity of removing the dust by exhaust fans, I am generally told that such fans would also remove the moisture, and thus interfere with the weaving; but if the evil can be overcome by the proper preparation of the size, as I believe it can, fans will not be necessary.

## Accidents in Factories.

This year I have had reported to me 95 accidents against 89 last year, an increase of 15, which I account for by more attention to the reporting of them; for by looking over the particulars of those reported, a list of which is appended, it will be seen that many of them are not such as can be controlled by legislation. I regret to have occasion to mention that in my district this year no less than seven fatal accidents have happened, against three for last year. Also, many very serious accidents have been reported, particulars of which will be found in the list appended. Numbers 53 and 94 are very serious, causing the loss in each case of seven fingers. The latter was a most singular one, and such as no person, I think, would have foreseen; but it has drawn my attention for future inspection to a heretofore unsuspected danger, and wherever I see it I will suggest the remedy, which is very simple. It is most unfortunate for the poor boy, who is only 14 years of age, to lose the best half of seven of his fingers, and so early in life. It will no doubt alter his future career — but for better or for worse who can tell?

In looking over the details of accidents reported to me, I find that sixty fingers or parts of fingers have been lost, either taken off direct by cutting tools or so badly mangled as to require amputation; one hand taken off, two legs broken, two eyes destroyed, and many others of a more or less serious character. Three happened from coal oil explosions, three from molten iron, three from elevators, and one in a printing press. From rolling mills five have been reported and from laundries four—three of these in mangles; in woollen mills eight; cotton mills five; wood working factories thirty-five; iron and tin industries twenty-

five. Those accidents happening in wood working establishments can be particularized as follows:

| | |
|---|---|
| Circular saws | 14 |
| Band saws | 1 |
| Planers | 9 |
| Slivers and boards thrown by saws | 4 |
| Belts | 2 |
| Mill gearing | 1 |
| Weight falling | 1 |
| Gears | 1 |
| Coal oil explosion | 2 |

The tin and iron industries as follows:

| | |
|---|---|
| Tin stamping | 2 |
| Drop hammer | 4 |
| Mill gearing | 1 |
| Caught in revolving spindle | 1 |
| Punch | 1 |
| Struck by flying iron | 1 |
| Metal falling on them | 4 |
| Lathe | 1 |
| Drop press | 1 |
| Fingers between chain and pulley | 1 |
| Overloading elevator, causing it to fall | 1 |
| Cleaning in motion | 1 |
| Gears | 2 |
| Molten iron | 3 |
| Coal oil explosion | 1 |

Of the above, six may happen in any industry. Among those accidents happening in the textile factories—cotton, wool or flax—four occurred in the cards, two in rollers, one in the headstock of a mule, two by scalding, three in gears, and one in a press, one by falling. Out of the ninety-five reported to me, two were caused by belts, three by mill gearing (distinct from machinery), and seven by gears, chiefly small. The eighty accidents of last year happened in fifty-nine different factories, while the ninety-five of this year happened in sixty-two. In eleven of the factories accidents happened both last year and this. The balance happened in factories that had not reported any in 1889.

During the present year three factories reported three accidents each, two reported four each and one reported six, equivalent to twenty-three in six factories, nearly all of which were not within the control of factory inspection. Of the accidents, thirty-two happened to persons under twenty-one years of age, of whom six were females. The boy killed at the terra-cotta works, two or three miles from Milton, 11 years and 7 months old, had been discharged the night before, but brought back again to work by his father. This was illegal employment, of which I was not aware, as I had never visited these works till after the accident.

About one-sixth of the persons employed in factories in the Western district are females, and their proportion of accidents would be about sixteen—one-sixth of ninety-five; but in reality only about a little more than one-third of this number happened to them; mostly for the reason, I believe, that their occupations are less hazardous, and that they are more steady about their work and less inclined to skylarking.

### Circular Saws and their Danger.

As saws are responsible for a large proportion of the accidents, over one-sixth of those reported, I wish to make a few remarks concerning these dangerous tools that are so universally in use; for I suppose one-half of the manufacturing industries have one or more in use, all of them sufficiently dangerous, and many of them particularly so, to every person on the premises.

Saws in general may be known as upright, band and circular. To these latter I will more particularly refer. They have various names according to the work they are required to perform, or on the manner in which they are set up and

operated in their frames: such as shingle, veneer or section, butting, edging, re-saw, stave, equalising, swing, railroad, angle, concave, cylindrical, grooving, and others. These saws are supposed to be made of the best crucible or finest silver steel, and to be carefully and uniformly tempered throughout, requiring great skill and watchfulness on the part of the temperer. Great care is also required in hammering out these saws, as often the process forces the strain to one part, causing a slight bulge which may crack when some unusual strain is put upon the saw. The crack relieves the strain caused by the bulge, and by boring a small hole at the terminus of the fracture it will go no further and the saw, I have been informed by a maker of them, is safer than before the fracture.

Shingle saws vary in diameter from 30 to 36 inches, are rather thin for their work, one would judge from their appearance, being about one-eighth of an inch in thickness, supported at the back by an iron flange to which the saw is made fast by proper screws. This flange will extend to within 6 or 8 inches of the saw's circumference. These saws occasionally break, as one did in this city in October, the flying piece striking a workman near by in the side, causing his death ninety minutes later.

Veneer saws are necessarily thin, in order not to waste the valuable wood being cut into veneer. They are made in sections, fastened as a circumference to a steel blade or disc.

Butting saws are in use in various works, to square off the ends of lumber in saw mills and for cutting off butts of smaller sticks in other industries. Most of these saws I look upon as being very dangerous, as the saw overhangs the frame, so that persons may accidentally walk or stumble against it.

Edging saws are chiefly used in lumber mills for cutting off the bark edge from boards. I do not know that there is any special danger from these, except it be that in many saw mills the saw for cutting the logs and the butting and edging saws with their tables or frames are rather crowded together so that the workers are sometimes jostled by the lumber being handled, and thereby thrown against a saw.

In a re-saw machine I do not consider there is any special danger. They are common in planing mills and in other wood-working industries, and no accidents have as yet been reported to me from this machine.

The stave or cylindrical saw is a tube of steel about two feet in diameter, by about thirty-six inches in length, with the teeth on the outer end, and is used for cutting heavy staves such as are used for oil and liquor barrels. The cylinder is set up in a frame and runs horizontally, near the floor. The special danger of this saw is the liability of a person to run against it. It would be difficult to prevent this by a guard, as the wood can only be fed in from the end exposed.

Equalising saws are two cross-cut saws on the same mandril, at the extreme ends; each saw overhangs the frame in which it is set and projects a few inches in front of it. They are used for cutting off the staves or stave-bolts to an equal length. In stave works they are set the length of the staves—32 inches apart; they are also used in factories making waggon or carriage wheels for equalising the spokes. In some of these equalising saw machines the wood to be cut is fed into the saws by being placed on a table swinging from above, and in others the feed table rests on pivots below. I consider these saws to be very dangerous, and not easily guarded; but those with the table resting on pivots may be guarded in respect to the top and front of the saws by putting a suitable box across the table covering the saws, allowing room at the ends for the clear-

ance of pieces of wood cut off. But this does not prevent risk of injury from the lower part of the saws, which in this arrangement of feed table it seems impossible to guard against. On the other hand those equalising saw machines, so arranged as to feed by the table swinging from above, cannot be guarded in the same way as the other, as the box covering of the saws would be in the way of the feed table swinging through between the saws. So while the front and lower part of the saws in this arrangement can be guarded, I do not feel satisfied that the top of the saws can be. At best these saws are dangerous—more than ordinarily so.

Swing saws are those attached to a frame, which is usually swung from the floor above. There is more than ordinary danger from these. The operator has to pull the saw up to its work, overcoming the resistance of a counterbalance weight, which is attached to the swing frame, generally by a rope, but occasionally by a chain. Sometimes the rope gives way and allows the revolving saw to come forward with sufficient force to reach the operator, often causing serious injury. As a check to this there ought to be a frame built down from the floor above in such a position that its cross piece will arrest the forward motion of the swinging frame at a point which would prevent the operator from being touched by the saw. There is no difficulty in putting a guard over the saw itself of this machine, and many have them.

As to rip-saws, several practical men have informed me that all of this kind should have a wedge set in the table behind the saw to keep open the cut, so as not to bind the saw, which causes the board to be thrown forward and frequently injuring the sawyer. This year in this city one young man was reported to me as meeting his death from this cause; also other injuries more or less serious were reported.

The railroad saw is for a similar purpose to the swing saw, but usually for lighter work; it is of quite different construction—put in a suitable table, the saw being set in a sliding frame within the table, and by pressure of the foot on a lever is moved up to its work. I can see no special danger in this machine more han appertains to all saws; in fact I think there is less than in any other I have noticed, without guards.

The angle saw I consider very dangerous to the attendant, nor do I know of any way by which it may be made less so. The device consists of two saws set at right angles to each other, with their teeth just escaping contact. The saws operate on the top of the log to be cut, one cutting down and one cutting in, thus sawing out a square stick; they are used chiefly in chair and handle works. Here, as about many of the uses to which saws are put, all depends on the watchfulness of the attendant.

Concave saws are used for various purposes, but there is no special danger from them more than from a flat saw, rigged up in the same way.

Another dangerous use of the saw is the machine for making axe handles. In this machine the saw, a thick one of about twelve inches diameter, projects in front of the frame, about one-half its diameter, and there is nothing to prevent the attendant or other persons from coming in contact with it and receiving most serious injury. This can easily be guarded, and I have asked to have it done wherever I have seen this machine in use. There are many other devices for using circular saws, but those I have referred to are most common.

Generally speaking the circular saw is always dangerous when in motion, and care is needed on the part of the attendant when operating any style of a saw machine; but there are some adjustments or adaptations of saws much more

dangerous than others. Those running through a slot in the table are perhaps the most harmless, as regards cutting accidents, while those overhanging their frames and projecting out are the most dangerous. Of the many guards devised none are free from objection, for one reason or another. I know of two saws breaking in my district this year, one a shingle saw, 35 inches diameter, tearing off about one-quarter of its circumference to the flange, about seven inches deep; the piece flying struck a man near by, causing his death. The cause is supposed to be that the shingle block fell into the saw diagonally across the grain of the wood, probably through want of care in putting the block in place. The other saw broken was in a waggon wood-work factory. On the frame or table of the butting saw the attendant left the hammer; it jarred around till the handle touched the saw teeth and next the steel head was in the teeth causing the saw to break and a piece to fly, fortunately without injury to any person.

As to covering or guarding all saws, it is impracticable without very much interfering with the quantity of work turned out; yet in some factories manufacturing continuously the same certain articles when the lumber in process is always about the same size and thickness, it is easy enough to devise a special guard for a particular saw. But there are industries where it may be that every other stick to be sawn is of different dimensions from the previous one, and there is no adjustable guard with sufficient scope designed as yet, that I am aware of, which will meet these cases. I know of several instances where the latest device of guard has been purchased and applied to saws, which after a short trial by the operator has been taken off and abandoned as impracticable.

Before touching on the legal aspect of guarding saws, I wish to add that there are two precautions that should be taken in every factory where there is a circular saw in use, that I know will prevent some accidents. One is that saws should not be left running when not in use, as I find is too frequently the case, and I always caution the workman, foreman or employer when I find it so. The other is, that the aisles or passages near saws should be kept free from bits of sticks that may trip or cause a person passing to fall towards the saw. Many wood working places I visit are quite clean in this respect, but others are very bad. I went through one in this city two years ago, where I had to walk altogether on the sticks and refuse from the saws, and where I believe the floor was two feet below me.

Now, in regard to the Ontario Factories' Act, Section 15, s. 1, I have never considered the saw of a circular saw machine, nor the cylinder and knives of a planing machine, as being included in this clause. I knew my duty of seeing that the belting, shafting and gearing belonging to these machines were to be guarded as far as practicable, but not the saws or planer knives. Chief Justice Armour has confirmed me in my opinion as regards saws, for in March last, *re* Hamilton *v.* Groesbeck, an action for compensation for the loss of Hamilton's son's arm by a butting saw in Groesbeck's stave mill, among other things, after reading the above referred to section of the Factories' Act, he says:

"We think, however, that the word 'moving' here used is so used in its transitive signification, and as if the word 'propelling' had been used, and that it was not intended to provide that the tools and instruments moved or propelled should be guarded, but only the machinery moving or propelling them; and that the words 'other moving parts of the machinery' are referable only to parts of the machinery used for a like purpose, as the belting, shafting, gearing, fly-wheels and drums. Upon this construction, therefore, of this provision, there was no statutory duty imposed upon the defendants to guard the saw."

This judgment confirms the view of this clause I had held all along, but notwithstanding my opinion I have always suggested protection for employés from saws that were exposed or that I considered as more than ordinarily dangerous, and from other dangers that I saw, even if not specified in the Act It is held in the Attorney-General's department that section 14 of the Factories' Act gives the inspector power to enforce protection as regards health and safety to employés wherever he may think it necessary, even if it be not specified in the Act. Therefore when an inspector finds, say, a stair in a very dilapidated and dangerous condition, or without a hand-rail on the stairs or around the landing above, if he considers employés would run less risk of accident if the stairs were repaired, or be provided with a hand-rail, he can, under section 14, have his views carried out. There are many dangers to employés in factories that are not mentioned in section 15, or its subsections, which section 14 empowers the inspector to have removed as far as practicable.

As regards the fencing of machinery (as distinct from mill gearing) in Britain the "Factory and Workshops Act, 1878," differs from our Act in this respect, that there machinery is not required to be fenced or guarded till so ordered by the inspector, and then if the owner or occupier objects he must notify the inspector within seven days and they each proceed to appoint an arbitrator, and the question is thus settled according to the arbitration laws, the decision to be given within twenty-one days unless the time be extended by the inspector. This system assists the inspector and to a certain extent relieves him of responsibility, where the question of impracticability is raised.

## Factories Legislation.

I am not unfrequently forced into an argument by employers and others taking an interest in public affairs as to the right of the Legislature to place on the statute book such a law as the Ontario Factories Act; more especially the clauses restricting the age at which children may be employed, and limiting the working hours of females, particularly those over twenty-one years of age, as interfering with the liberty of the subject. Quite a number with whom I have conversed on the Factories Act seem to have been under the impression that such legislation originated in this Province in 1884; and as the factories inspectors' reports are liberally distributed among the parties most interested, I have thought it well to give a short sketch of the origin of factory legislation in Great Britain and its extension to other countries.

No one, I suppose, will deny that such legislation as is possible and constitutional in Britain is also the same in Canada. So far as the circumstances and conditions of the people are concerned, trade and manfactures are the same. No doubt there is considerable legislation interfering with the liberty of the subject there and here. It is pretty well known that if a person steals, forges, commits arson or murder, or other crime, he is liable and quite likely to have his liberty interfered with, and no one complains of it unless it is the party arrested. Again, the local boards of health in these latter days also interfere more or less in people's private affairs, and very little complaint is made on this score either, unless it is that the boards do not interfere as much as they should. We all agree that health boards are very necessary, and no doubt they cause many persons more or less annoyance. Still the people at large look passively on the operation of the various laws of the country although so jealous to maintain their rights, gained by frequent and almost continual struggles through past centuries. The reason is that it is generally understood that every citizen owes something to the state, and therefore the people do not as a mass object to any

legislation involving the great principle of "the greatest good to the greatest number," even if it does demand some small personal sacrifices. On this principle we have at the present day enacted so many laws beneficial to the community at large. As time advances legislators see their way to legislate on matters that seemed impossible a few years previously, owing mostly to the advance of public opinion due to a more universal education of the people and to the press—an educator itself.

In May's Constitutional History of England, chapter XVIII, writing of the time about the beginning of the present century, after alluding to the improved spirit of legislation coincident with liberty, to the institution of poor laws, to the better provision for the care of lunatics by the compulsory building of county asylums, licensing private asylums, and making all places where the insane are confined open to the visits of an inspector, Mr. May says: "Two principles were here carried out, the guardianship of the state and the obligation of property to bear the burden of a liberal treatment to the lunatic poor." These principles have been much more extensively applied as the century advanced. May further says:

"In other cases the state has also extended its generous protection to the weak—*even where its duty was not so clear*. To protect women and children from excessive or unsuitable labor, it has ventured to interfere with husband and wife, parent and child, laborer and employer, with free labor and wages, production and profits. The first Sir Robert Peel had induced the legislature to interfere for the preservation of the health and morals of factory children. But to the earnest philanthropy of Mr. Sadler and Lord Ashley is due their first protection from excessive labor. It was found that children were doomed to immoderate toil in factories by the cupidity of parents, and young persons and females accustomed to hours of labor injurious to health and character. The state stretched forth its arm to succour them. The employment of children of tender years in factories was prohibited; the labor of the young of both sexes under eighteen and of all women was subjected to regulation; an inspection of factories was instituted and provision made for the education of factory children. The like parental care was extended to other departments of labor—to mines and bleaching works, and even to the sweeping of chimneys."

Now, on referring to the Imperial statutes I find first an enactment, 42 George III. chap. 73, assented to June 22, 1802, entitled "An Act for the Preservation of the Health and Morals of Apprentices and others employed in Cotton and other Mills and in Cotton and other Factories," applying to mills and factories employing three or more apprentices or twenty or more other persons, it is enacted that rooms in mills and factories are to be lime-washed twice a year, and to provide sufficient windows or openings in such rooms as will insure a proper supply of fresh air. Master or mistress to provide apprentices with two suits of clothing, hats, shoes, linen, etc.; apprentices to work only 12 hours, between 6 o'clock a.m. and 9 o'clock p.m., and to receive education in reading, writing and arithmetic. Justices of the peace to appoint two visitors of such mills and factories to visit and report the condition thereof to the quarter sessions for counties, ridings, etc. Visitors were not to be financially interested in such mills or factories, and one of them was to be a justice of the peace and the other a clergyman of the established Church of England, or of Scotland, if in Scotland. If the visitors found infectious disease to be prevailing they could require the employer to procure medical aid. Looking back on this Act with the light of more modern days, it seems to be a very good beginning in factory legislation. In 1833 the Act was amended to appoint four permanent inspectors, as the old

system of visitors did not prove to be of much service, the visitors, as a rule, being indifferent to their duties under the Act.

In July, 1819, 59 George III., cap. 66, there was passed "An Act to make better provision for the regulation of Cotton Mills and Factories, and the better Preservation of the Health of Young Persons employed therein." This Act applies only to the preparation and spinning of cotton and wool, and it enacted that after January 1st, 1820, no child should be employed under nine years old; no person under the age of sixteen to work more than twelve hours, and that to be done between 5 a.m. and 9 p.m., with a half hour for breakfast and one hour for dinner, between 11 a.m. and 2 p.m.; also for provision to make up lost time.

By the Act of 3 and 4, William IV., cap. 103 becoming law in January, 1833, entitled "An Act to regulate the labor of Children and Young Persons in the Mills and Factories of the United Kingdom," persons under 18 years of age were not allowed to be worked at night in the mills and factories between 8.30 p.m. and 5.30 a.m., in the cotton, woollen, worsted, hemp, flax, tow, linen or silk factories driven by steam, water or other mechanical power. Six months after the passing of this Act no child under eleven years old, and thirty months after the same date no child under thirteen years old would be permitted to work over forty-eight hours a week, nor more than nine hours in any one day, except in silk mills ten hours. They were to have two holidays and eight half-holidays each year; doctors were to certify as to fitness of the child to work, and children were to be sent to school.

Further factory legislation was enacted from time to time, until the Act of 1874 was passed. Then there were "no less than fifteen statutes in force concerned with the regulation of the employment of women, young persons, and children in what is technically known as a 'factory' or 'workshop;' not to mention Acts dealing with subjects closely connected, or of the same character, such as the Bakehouses Regulation Act, the Chimney-sweepers Acts, the Mines Regulation Acts, and the Agricultural Children's Act." (Royal Commission Report.) The first legislation in this direction, and for sixty years after, was confined to "textile factories," such as cotton, woollen, silk, linen, tow, flax, jute and hemp; until in 1864, when by the "Factory Acts Extension Act," many various classes of manufacture were brought under regulation. And "lastly, by the Acts of 1867, various enumerated trades were legislated for as factories and all others as workshops." (Redgrave's Factory Act.) From the same authority I further quote:

"It was assigned to a Royal Commission in the latter part of the year 1875 to take all of these statutes under review, to consider their various enactments, modifications and exceptions, to take such evidence as they thought requisite, and then to submit a proposition for bringing into harmony the incongruous mass of provisions which encumbered the statute book, . . . and in February, 1876, their report, with a volume of evidence, was laid before Parliament. The report deals exhaustively with the question; it traces out clearly and distinctly the course of legislation, the causes of the differences of regulations in different trades; it points out wherein some differences may cease, and others be mitigated, and by a series of resolutions lays down the ground work for the consolidation of the various Acts."

The result of that Royal Commission's recommendations is "The Factory and Workshop's Act, 1878."

The example of Britain has been followed by several colonies and nations, although in greatly varying degrees. In Canada it was followed by the province

of Ontario in 1884, and the province of Quebec in 1885; in India by the Presidency of Bombay, previous to 1883; in the United States by the State of New York in 1886; Massachusetts in 1882; New Jersey in 1883; Ohio in 1884; Pennsylvania in 1889; Connecticut in 1887; Wisconsin in 1887; New Hampshire in 1879; Maine in 1880-1, as also in Rhode Island, Vermont and Maryland. In Europe it was followed by Austria-Hungary in 1859; France in 1874; Germany in 1878; Switzerland in 1877, and probably by others not yet come to my notice. Some two or three of the American States have no factory inspectors, as the enactments are few. One or two states enforce the factory laws from the labor bureaus.

The restrictive clauses of the factory laws of some of the foregoing countries and states extend much further than those of Britain or Canada, and those of others fall very far short. As an instance of the former, I give the state of Massachusetts, which, in addition to the usual clauses for the protection of women and minors employed in factories, extends its protection to those employed in mercantile establishments as to elevators, hatchways and well-holes, and regulates the age of custodians of elevators. This state also has a law to provide for the weekly payment of wages by corporations of all kinds; but it does not appear to apply to individual employers. The state regulates the construction of certain buildings; it has also an Act to provide for the inspection in certain cases of buildings and other structures alleged to be unsafe or dangerous, and an Act to secure better provision for escape from hotels and certain other buildings in case of fire, all of which come within the duties of the factory inspection department of the district police.

It would seem from the factory laws on the statutes of the before-mentioned countries that the question of jurisdiction of the state to legislate on this subject is settled for all time to come. In conclusion of this subject, I will add a few lines from the report of the Royal Commission of 1875, on which report the present Factory and Workshops Act is based. In writing of the previous complicated legislation regulating the employment of children, young persons and women, in factories and workshops the Commissioners say:

"We have no reason to believe that the legislation which has been productive of such marked benefit to the operatives employed, has caused any serious loss to the industries to which it has been applied. On the contrary, the progress of manufacture has apparently been entirely unimpeded by the Factory Acts; and there are but few, even among employers, who would now wish to repeal the main provisions of the Acts, or would deny the benefit which has resulted from them."

## North American Inspectors Association.

Through the kind invitation of Rufus Wade, Esquire, chief inspector of district police, and chief inspector of factories and public buildings for Massachusetts, I was enabled to be present at the fourth annual convention of the "National Association of Factory Inspectors of North America," held in New York city in August last. Here I had the pleasure of making the acquaintance of nearly fifty inspectors from different states, among whom eight were females —a new feature in factory legislation—from Pennsylvania and New York.

Some very interesting and instructive papers were read by different delegates, and discussions followed; besides which exhibits were made of a model of elevator guard, a fire escape, and a device for stopping main shafting. Out of courtesy to Mr. James Mitchell, factory inspector for the Province of Quebec,

and to myself the name of the association was changed to that of "International Association of Factory Inspectors of North America." Referring to the office of Chief Wade, of Massachusetts, I may explain that the district police of that state is divided into two departments—the inspection and detective. Mr. Wade in his last report writes as follows :

"No member of the inspection department is called upon to perform any other duties than those pertaining to the office of inspector of factories and public buildings, unless his services are commanded by the governor, as provided by law in suppressing riots and preserving the peace."

I am indebted to the chief inspectors of the states of Massachusetts, New York, Ohio, and Connecticut for copies of their annual reports ; also to Monsieur Gruner, of Paris, France, chief secretary of the Permanent Committee of the Congress of Accidents to Laborers, for reports of the International Congress.

I have the honor to be, Sir,
Your obedient servant,

ROBERT BARBER,
*Inspector of Factories, Western District.*

# CENTRAL DISTRICT.

To the Honorable the Minister of Agriculture:

Sir,—I have the honor to submit the following report on factories inspection for the year 1890:

## Age of Children.

While on the whole there appears to be a general desire to exclude children under the lawful age from being employed in factories, there are cases where watchfulness is necessary in order to prevent a violation of the Act, owing to the practice of parents in giving false certificates of age and of employers in being satisfied with a simple statement as to age instead of obtaining a certificate as required by the Act. In some cases parents ask to be allowed to send their children to work in factories because they are only a month or two under the age required by the Act, as if an inspector could authorise its violation, and appear to be surprised that the lack of a month or two in the age should be noticed. On my remonstrating with a guardian wishing to send a girl to work in a mill, not quite fourteen, stating that she ought to be at school instead, I was met by the reply, "Sure she needs meat first." A limit should certainly be placed on the age at which children should be allowed to engage in hazardous occupations, and no child should be allowed to work at such under fourteen years of age at least. The state of Ohio places the limit of age at sixteen years, under which no young person is allowed to engage in hazardous occupations. In the province of Quebec the Factories' Act as amended reads, "In the factories indicated in a list approved by the Lieutenant-Governor in Council as unhealthy and dangerous, the age of employés cannot be less than sixteen years for boys and eighteen for girls."

## Closet Accommodation.

Since attention has been drawn to the necessity of providing conveniences, in accordance with the requirements of the Act, a great improvement is noticeable in the better observance of the Act in regard to such matters. In the city of Toronto the inspectors of the local board of health take note of places where separate closets are necessary and urge their adoption. It might be well that power should be conferred on the local boards with reference to providing similiar conveniences for the use of employés in stores where necessity exists for them, separate conveniences being as necessary for employés in stores as in factories. Parents have informed me that in the past much suffering has resulted to females owing to the want of such conveniences. In only a few cases have I found it necessary to bring pressure to bear in order to secure compliance with the Act in this respect.

## Accidents in Factories.

The number of accidents reported as having occurred in the Central District during the year are ninety-one, four of which were fatal. Other accidents doubtless have occurred which have not been reported and it may be necessary to invoke the aid of the law in order to obtain a compliance with the Act in regard to the reporting of accidents. Circular saws are responsible for twenty-five accidents, two of which were fatal. Appended herewith is a plate of a safety-hood for circular saws, as published by the Anti-Accident Association of Mulhouse, Alsace. In describing the requisites of a safety-hood in the work published by the Association, the following are given:

Fig. 1, Section.

"A safety-hood should fulfil the following conditions:

"1. The workman must not be prevented from seeing the working point of the teeth or following the course of the saw-cut.

"2. It should be attached in such a manner that the bench remains exposed as far as possible, so that work may not be interfered with.

"3. It should satisfactorily resist any longitudinal or transverse thrust or pressure.

"4. It should permit the workman to keep almost continually at work, and should not have to be lifted up or taken completely away."

The following is the description of the plates:

"One of the best systems consists of a hood (B) of wood, (figures 1 and 2), or better still, of sheet iron and netting, (figure 3), which is connected with the hanging-beam (D) or a support fastened to the bench by means of a lath or a flat iron (T) with a slot. The curve (b) of the hood terminates an inch or two above the lower edge of the surface (B), the latter being perforated so as to light up the teeth. The hood is balanced by the counter-poise (Q), and can be held up at any desired height by means of the bolts (P) with fly nut."

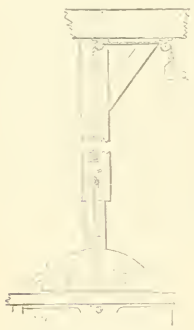


Fig. 2, Side view.

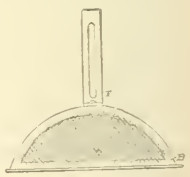


Fig. 3.

Thirteen accidents have been caused by gears, which in many cases have not been covered because of supposed immunity from danger to operatives, owing to the isolated or elevated position in which they were situated. But as it is generally the unexpected which happens, the Act provides that *all* gears shall be covered as far as practicable.

The tendency of young people to talk and "lark" with each other while operating dangerous machines or working near them is alleged to be a fruitful source of accidents, thus rendering it necessary to guard against the employment of too young persons in operating or working near such machines.

For the prevention of accidents in factories the Anti-Accident Association of Mulhouse, Alsace, was founded in 1867, being at first composed of about thirty members, benevolent manufacturers, who subscribed in proportion to the size of their respective factories. Its object is to prevent accidents by means of inspections in the factories of members, and makes the following appeal:

"What would one not do to save the life of a fellow-creature, and how heart-rending it is to find one's self compelled to be an impotent witness of an accident to a human being! Should we not therefore adopt all possible precautions to prevent those accidents, often so terrible, which pass unnoticed only on account of the very frequency of their occurrence, or because we have fallaciously assumed that factory accidents are the inevitable accompaniments, the fatal consequences of an industrialism that claims its victims?"

There is a great necessity for an insurance system, not only as against accidents, but on the life of a workingman as well. But as the efforts of the majority of the laboring classes are required exclusively, in order to obtain a bare living for themselves and their families, they have to forego the advantages of insurance from sheer inability to pay the premiums required. So that labor would require to receive more of the wealth produced than it does at present before it can indulge in the luxury of insurance.

## Working Hours in India Cotton Mills.

As the product of some of the cotton mills in Ontario is being sent to China, it may be well to note that the cotton mills in India—the number of which is steadily increasing, and it is claimed that one-half of them will compare favorably with any in England—send quite a large amount of their product to the same country. The statement has recently been made in the press that the Manchester cotton manufacturers are complaining to the home government that children are allowed to work in mills in India at a much earlier age and the operatives to work much longer hours than the same class of operatives in England. It may therefore be of interest to quote from the report (1887) of the inspector engaged by the Bombay Government to administer the Factory Act in that presidency. The report says:

"The working hours in Indian mills are from daybreak to sunset (a period of nearly fourteen hours in the summer months) with twenty minutes to half-an-hour for meals at breakfast and dinner time; no half holiday being given on Saturday. Sundays are working days; although some firms, especially European, stop alternate Sundays, and in some cases, one Sunday a month. On these stopping days, however, the hands are required to come to clean their frames, being allowed to leave the mill at different times, varying from 10 a.m. to 1 p.m." It is not very creditable to the European firms, who may reasonably be supposed to be Christians, that they should allow their mills to be run on Sundays."

Children between seven and twelve years of age are not allowed to work more than nine hours a day. As labor is alleged to be abundant, and as the average wages paid to men in a cotton mill, from five to ten shillings a week, and women's wages from three and a half to four shillings per week, the employment of such young children is inexcusable.

It may be confidently expected that Europeans will be enabled, by their long experience, in the scientific adulteration of cotton to compete successfully with the natives of India, notwithstanding the longer hours worked and the more tender age at which the children are allowed to work.

## Adulteration of Cotton.

The report on the effects of heavy sizing in cotton weaving presented to both houses of the Imperial Parliament is interesting, as showing the proficiency

which has been attained in adulterating cotton for the eastern markets. The report says:

"We conversed with one manufacturer who admitted that to every 100 lb. of warp he put 200 lb. of size. Another had gone as far as 220 lb. In one factory visited by us the manufacturer weighed in our presence a piece of cotton cloth weighing eight and one-quarter pounds, and another weighing four and one-half pounds, and remarked that the latter contained by far the larger amount of cotton." It also states: "There appears to be a steady demand in eastern markets for a stiff cloth of a leathery consistence, and (of course) of the due weight per piece, and of the minimum price. . . . Whatever natural regrets may therefore be felt at the decline of an ancient staple, they are as unavailing as if they were expended upon similar degradations that have long since taken place in the silk and woollen manufactures."

The principal ingredients used were said to be "tallow, flour, farina, china clay, magnesium chloride, calcium chloride, zinc chloride and magnesium sulphate." The principal ingredient added to the size for the purpose of retaining moisture and thus preserving weight, is chloride of magnesium. Sulphate of magnesia is used in some cases, and chloride of calcium in others, but the employment of magnesium chloride is far more common. Chloride of zinc is used for preventing mildew.

### Prosecutions for Offences.

There have been five prosecutions in my district for offences against the Factories' Act. One parent for allowing his daughter to be employed under fourteen years of age, having given a false certificate of her age to her employer, was fined $2. I did not prosecute for his having given the false certificate, and only asked for a nominal penalty, being the first Factories' Act case in the city.

Some parents try to get over the difficulty of giving false certificates by getting some other person to write out and sign certificates instead of the parents themselves. As the Act requires that certificates of age shall be signed by the parents or guardians having control of the child to whom the certificate refers, employers would do well to ascertain that the signatures to certificates of birth are genuine, otherwise the employers are liable.

One employer was fined $25 and costs for employing a boy under twelve years of age. The boy lost two fingers in the gear of a machine. The parent claimed that as no certificate was asked he was under the impression that his boy was not in a factory. The boy had stated to the employer that he was over twelve years of age; had the employer required a certificate, and the parent had given a false one, the parent would have been liable.

One employer was fined $15 and $9.30 for costs for employing three females more than sixty hours in one week without a permit. Complaint was made that females were being worked overtime during three nights in each week. I communicated with the company and was assured that overtime had only been worked on two nights. On investigation I found that eighteen females had worked from twelve to sixteen nights overtime. I only prosecuted in three cases, the accused having promised to conform strictly to the Act in the future. I did not press the remaining fifteen cases. The defendant, I was informed afterwards, had expressed the opinion that the magistrates had inflicted the maximum fine, whereas they might have inflicted fines amounting to $150 and costs. And I may say that had the fines inflicted been less in amount than they were I was prepared to press every case.

One parent and an employing contractor were fined $1 and costs each for allowing a child to be employed under twelve years of age. I had cautioned both parties six weeks previously against employing the same boy. On my next visit I found him again employed; I then prosecuted. As the accused both pleaded guilty I was not present at the trial; there being some difficulty in obtaining a second magistrate (as required where there is no police magistrate,) I was only to be notified should the accused plead not guilty. I had requested the magistrate when lodging the information to deal leniently with them in the event of their pleading guilty.

In all the prosecutions I have consulted the Deputy Attorney-General, and have submitted to him all cases of infraction of the Act from whatever cause. In cases where an honest endeavor has been made to carry out the provisions of the Act I have not taken advantage of any infraction which was evidently the result of a misapprehension on the part of the employer.

In one case the Attorney-General's department considered that the penalty inflicted had not been commensurate with the magnitude of the offence, viz.: the deliberate and continued employment of so many females for a longer period than allowed by law. I acknowledge to have erred in prosecuting in only three of the cases. In future, wheresoever I find females employed for a longer period than that authorized by the Act, I shall prosecute every case.

I may here remark that the Deputy Attorney-General is of opinion that sufficient time has now elapsed for all interested to become acquainted with the provisions of the Act, and that ignorance cannot hereafter be received as an excuse for its contravention.

## Complaints and Grievances.

Numerous complaints, verbal and otherwise, have been made and investigated, and, where necessary, action has been taken with a view to their being remedied. While the great majority of employers may be willing to attend to any complaint of their workers, and feel somewhat slighted at complaints not being made personally, and who, I doubt not, would consider it cowardly to discharge a worker for making any reasonable complaint, there are others who, when they hear of complaints being made, do not scruple to express the threat that if they only knew the parties who complained they would be discharged at once. It is not to be wondered at, therefore, that parties having complaints to make should seek to do so through other parties, rather than run the risk of losing their employment. Pity it is that one human being should have the power to determine as to whether another should be permitted to obtain a living or not.

If workers could have easy access to employers, instead of, as is too often the case, having to deal with irresponsible individuals whose only recommendations are their ability to extract the maximum amount of labor for the minimum amount of pay, and could have some certainty of being heard when they had a grievance, there would be, I am persuaded less of the hard feelings which exist between employers and employés, and fewer strikes as well.

If it be unjust for workers to claim a voice in regard to the apportionment of the wealth they produce, surely those who hold to such injustice should be able by reasoning to convince workers that such a claim on their part is unreasonable, without having recourse to threats of dismissal from employment, or other questionable tactics. If the holding and repressing of views which may be

antagonistic to those held by employers be deserving of punishment, surely those charged with the administration of justice would be the proper parties to order the punishment, and not private individuals.

Some employers look at the labor question simply from a standpoint of dollars and cents, regardless of the justice of the claims of labor; they seek only to obtain the greatest amount of labor for the least amount of wages. One employer stated to me that when he took a new contract he always discharged two or three of his workmen for not doing enough work, and that made the others do their best for fear of being discharged also.

Seven permits to work overtime were granted during the year.

I herewith append a return of accidents for the year, as also a return of the prosecutions for the same.

I have the honor to be,

Very respectfully,

JAMES R. BROWN,

*Inspector of Central District.*

# EASTERN DISTRICT.

To the Honorable the Minister of Agriculture :

Sir.—I have the honor to submit my report of inspection of factories in the Eastern District for the year 1890.

On reviewing the operation of the Factories' Act at my visits of inspection during the year, I have observed that the employers have acknowledged the advantages of the Act to themselves as well as to their employés, and have in most instances complied with its requirements with regard to the protection and guarding of machinery. To these precautions is due the considerable decrease of accidents, as but one of a serious character has been reported to me, and no other has occurred to my knowledge in the district. And in justice to the employer I must report that this accident was due more to the carelessness or over-confidence of the employé than to the want of protection to the machinery.

But while I noticed that the employers have worked earnestly to protect their employés from all possible cause of accidents, and I have been informed by several leading employers that since the operation of the Act all dangers in this respect have been removed, I regret to have to report that the same attention has not been given to several other clauses of the Act, which I consider to a great extent of as much importance.

## Employment of Children.

The first of these is the employment of children in violation of section 6 and sub-sections of the Act. In a couple of saw-mills I have found several at work far below the age required, notwithstanding that notice had been previously given not to employ them.

From observations in previous inspection I felt it to be my duty to recommend in my two previous reports that the minimum age of children employed in saw-mills be changed to fourteen years, and now, from my experience in inspecting those establishments, not only do I feel it my duty to renew that suggestion, but I would even recommend that the law be so amended that no child under the age of sixteen be employed at any machinery that by its nature would be of a dangerous character and which from circumstances could not be entirely protected. In my report for 1888 I stated that the inspectors would be considerably assisted in preventing the employment of young children in factories by the putting in force of the school law, compelling them to attend schools, but up to this time I have observed that no such steps have been taken in any locality in my district, except perhaps in the city of Ottawa. I consider that this object could be more effectually attained by an amendment to the Act preventing the employment of children under fourteen years of age in any saw mills, and children in any factory covered by the Act under the age of sixteen, unless such children are able to read and write, and a certificate to that effect be furnished to the inspector whenever required.

### Heating and Ventilation.

Another question to which sufficient attention has not been given is that of heating and proper ventilation. Heretofore I had always made my visits of inspection during the summer season, when there was no cause of complaint in this matter; but last year I made my inspection in those localities where a large number of persons were employed in manufacturing during the winter season, and in mostly every case I found the heating excessive and the ventilation insufficient and bad. In one instance I observed in one large room over one hundred persons employed, nine-tenths of whom were females, where the heat was far above temperate, and there was no ventilation except by doors leading to a tower, and the foul air was such that a person coming from outside could scarcely remain in the room more than twenty-five or thirty minutes, notwithstanding that it was constantly kept in a perfectly clean state. In another instance, in a weaving room in Cornwall, where some 200 or 300 persons were employed, the temperature was so high that a person passing through from one end of the room to the other would be as wet with perspiration as if dipped in water. In another instance, and the worst of all, I inspected a rag-picking room divided into two sections, in one of which some 20 or 25 females were employed and in the other some 5 or 6. The dust, stench and foul air were such that it was impossible for any person, except for those in the habit of working constantly therein, to remain in either of those rooms even a few minutes. In this case I received information by private source and good authority that this state of things had proven to be most injurious to the health and constitution of the parties employed therein. In all these cases I have called the attention of the employers to the facts, and I have suggested that they should use exhaust fans and air conductors.

I consider that the Act should compel the employers to keep in each room in their factories registers or thermometers, and that the heat should be kept at such a temperature as would be considered proper by medical authorities. This want of proper ventilation in the factories above referred to exists only during the winter season, as nearly every one of them is situated in healthy and airy localities and are well provided with natural ventilation.

### Care of Boilers.

The terrible accident which occurred in the city of Quebec and caused the loss of life of so many persons induces me to again refer to the question of boilers, as I did in my report for the year 1888. In that report I drew attention to the danger of boilers being placed in the basement of factories where a large number of persons were working in rooms above and in the same building. The occurrence of such an accident as above referred to shows the necessity to amend the Act and require that all boilers be located in a separate building from the main factory where persons are employed, that no person be allowed to work in that building except those employed directly in connection with the boilers or engines, and that no one be employed as engineer or allowed to take charge of engines or boilers unless he has obtained a certificate of competency and reliability from a proper board of examiners, such certificate to be produced whenever required by the inspector of factories.

### Fire Protection and Fire Escapes.

All the factories in my district are sufficiently protected against fire and provided with fire extinguishers; but in many instances there is a lack of fire escapes, and I have experienced a great deal of difficulty in arriving at some con-

clusion in this matter with the employers. Most of them contend that their buildings are provided with sufficient ways or means of exit or escape in case of fire, and that no panic could prevent the escape of any person in their factory. Sub-section 3 of section 16 of the Act could be so amended as to render the instructions to inspectors more definite and enable them to take a more decisive stand in this matter.

### Miscellaneous Observations.

I have observed many improvements in the system of water closets in several factories, made with a view to comply with the spirit of the Act, but there are yet some cases where the suggestions made at previous inspections had not been carried out, although the alterations were very desirable. I, however, expect to find at my next visit of inspection this matter properly and fully attended to, as I have received assurances from the employers that they would carry out my instructions.

During the year three permits have been granted to work overtime, under section 8 of the Act; one to the Stormont Cotton Company of Cornwall, granted in the month of January on the ground of lost time through sickness of some of their employés; another was granted to the Mississippi Woollen Mills at Appleton, in the month of November, on the ground of pressure of business; and the other was granted to the Almonte Knitting Company, of Almonte, on December 4th, to enable them to fill their orders in proper time.

Three of the factories in my district were closed and a couple of others running part time during my visit of inspection.

Only one accident of a serious character has been reported to me during the year, by which one Charles Edgar Cheney, working at Perley & Pattee's saw mill, Ottawa, lost his left foot while engaged in removing a slab-block which had got fastened between the saws. This accident was due, as I have above stated, more to the want of proper attention on the part of the employé than the fault of machinery.

I have observed during my last inspection that several improvements have been made in placing proper guards around machinery. Belts and shafts which were considered dangerous at a previous inspection have been removed or properly secured. No elevators or hoist-ways have been found without the necessary safety catches and guards, and all had proper notices posted up instructing employés how and when to use them.

In conclusion, I have much pleasure in reporting that the employers and employés have extended to me the greatest courtesy and given me all the assistance possible in the accomplishment of my duty, and both seemed to work in co-operation for the proper execution of the Act, and to understand that its operation was calculated to benefit them mutually, as in all cases information was given to me in a proper and friendly spirit.

I have the honor to be, Sir,
Your most obedient servant,

O. A. ROCQUE,
Inspector of Eastern District.

# APPENDIX.

## ACCIDENT REPORT FOR WESTERN DISTRICT, 1890.

| No. | Date. | Employers. | Place. | Person injured. | Age. | Particulars. |
|---|---|---|---|---|---|---|
| 1 | Jan. 3 | Penman Mfg. Co. | Paris..... | Archibald Blake, (fatal). | 16½ | Shirt-sleeve caught in cards of carder; arm torn between wrist and elbow. Lockjaw set in and he died on 18th. |
| 2 | " 4 | M. B. Perrine & Co. | Doon..... | Nelson Wildfang.. | 18 | Two fingers and thumb of right hand injured in hackle machine, requiring their amputation. |
| 3 | " 13 | Penman Mfg. Co.. | Paris..... | Neil Stewart..... | 14 | Elbow dislocated; caught in belt of carder. |
| 4 | " 13 | Kennedy & Co.... | Toronto .... | Chas. Walkie..... | 16 | Leg hurt; supposed to have been thrown by belt in planing mill. |
| 5 | " 13 | Jas. Murray & Co. | do .... | Girl ..... | 19 | Finger pierced by needle of wire stitching machine; idle 3 weeks. |
| 6 | Feb. 1 | McClary Mfg. Co. | London..... | D. Gilmore. ..... | 16 | Fleshy part of finger pinched by stamping machine. |
| 7 | " 4 | Patterson Bros. & Co. | Woodstock . | Jas. McGregor.... | .... | Hand crushed under drop-hammer. |
| 8 | " 6 | S. Hadley..... | Chatham ... | Geo. Pritchard.... | 33 | Elbow injured by left arm being caught by coupling when putting on a belt on line shaft. |
| 9 | " 6 | McDougall Mfg. Co. (Limd.) | Aylmer .... | Beecher Doane.... | 25 | Middle finger of right hand cut off by rip-saw while reaching over to oil shaft. |
| 10 | " | J. O. Wisner, Son & Co. | Brantford .. | C. W. Herbert.... | 20 | Leg broken by getting caught in mill shafting, and carried around; he was on a ladder to take off a belt. |
| 11 | " 25 | Parnum Wire & Iron Co. | Walkerville. | G. Fischell.. ..... | 17 | Clothing caught in fast revolving spindle, causing compound fracture of right knee. |
| 12 | " 28 | A. Harris, Son & Co. | Brantford .. | Jno. Oswald..... | .... | Sliver thrown from circular saw penetrated his hand. |
| 13 | Mar. 7 | do do .. | do .. | Thos. Phair..... | 19 | Struck across the nose by the adjusting lever of the punch. |
| 14 | " 17 | Jacob Lawrence & Son. | Sarnia..... | Louis Comber .... | 45 | Lost four fingers of left hand by slicker. |
| 15 | " 27 | Hamilton Iron Forging Co. | Hamilton . | Jerome Matrahe.. | 27 | Turning hot bloom under drop-hammer, was struck on the side of the head by the tool used for handling the bloom. |
| 16 | " 22 | Hamilton Cotton Co. | do .. | Jas. Powell..... | .... | Right hand caught in cards and drawn in, tearing off thumb and two first fingers. |
| 17 | " 24 | Kilgour Bros.... | Toronto .... | Louisa Stevens.... | 19 | Fingers of left hand crushed in a cutting press. |
| 18 | " 25 | The Barber & Ellis Co. | do .... | F. Rodney.. .... | 15 | While feeding a corner cutter his hand slipped and was badly cut; idle several weeks. |
| 19 | ..... | O. & W. McVean. | Dresden .... | Jas. Blanshard... | .... | Hand bruised by weight falling on it. |
| 20 | April 1 | Hamilton Bridge & Tool Co. | Hamilton... | T. Richardson.... | .... | Struck in the eye by piece of iron; idle several weeks. |
| 21 | " 1 | Allen Mfg. Co ... | Toronto .... | Mary Clark and | | Two sisters, caught in a mangle; the left hand and arm of each was drawn in and badly bruised and burnt; idle several weeks. |
| 22 | " | do do .... | do .... | Mrs. A. Sently.. | | |
| 23 | " | Norton Mfg. Co.. | Hamilton .. | F. Stoneman ..... | 17 | Two fingers cut off at first joint in power press; idle three weeks. |
| 24 | " 5 | Ontario Rolling Mills Co. | do .. | Jno. Meehan..... | 35 | Shear beam broke and a heavy piece fell on his foot, bruising it badly. |
| 25 | Mar. 31 | do do .. | do .. | R. Nevel- ..... | 40 | Rail falling on 3rd finger of right hand, causing loss of part of it. |
| 26 | April 7 | A. Harris, Son & Co. | Brantford .. | A. Brown..... | 25 | Put his hand under drop-hammer while falling, causing loss of finger. |
| 27 | " 8 | Taylor & Scott ... | Toronto .... | M. Fran.. ..... | 16 | Two first fingers of right hand cut off by circular saw; first finger replaced; was sent to the hospital. |
| 28 | " 12 | J. B. Henderson.. | Thorold .... | B. Guyette ..... | 17 | He was cleaning around mule headstock, omitting to throw gears out; got one finger in gears and it had to be amputated. |
| 29 | " 10 | Brodie & Co ..... | Hespeler.... | Jno. Campbell.... | .... | Severely scalded about head and body by tub of soap boiling over. |

ACCIDENT REPORT FOR WESTERN DISTRICT, 1890.—*Con.*

| No. | Date. | Employers. | Place. | Person injured. | Age. | Particulars. |
|---|---|---|---|---|---|---|
| 30 | April 15 | Gutta Percha & Rubber Co. | Toronto .... | Hans Fairley ... | 45 | Left hand stuck in the rubber going through the rolls and the skin was stripped off from wrist to knuckles. |
| 31 | " 17 | Goldie & McCullough. | Galt... .... | Wm. Hunter ..... | 28 | Hand crushed by turning lathe. |
| 32 | " 18 | Hamilton Cotton Co. | Hamilton .. | Geo. Hume... .. | 18 | Leaning over gears of cards after removing the covering; was caught in the thighs and mangled. |
| 33 | " 21 | Brantford Furniture Co. | Brantford .. | — McPherson .... | 27 | Struck by board thrown from saw. |
| 34 | " 22 | Kerr Bros..... .. | Walkerville. | Jno. Foster ..... | 48 | Partial loss of three fingers of left hand by buzz planer. |
| 35 | " 25 | J. B. Smith & Sons | Toronto .... | F. Perkins ..... | 16 | Lost nail of forefinger while playing with band saw. |
| 36 | " 27 | Semmens, Ward & Evel. | Hamilton... | Joseph Lewis. ... | 21 | Forefinger sawn off at first joint while sawing coffins. |
| 37 | " 22 | McClary Mfg. Co. | London ... | Man ..... ..... | .... | Fingers smashed in a drop press while adjusting it. |
| 38 | May 7 | J. O. Wisner, Son & Co. | Brantford... | — McIntosh ..... | 26 | Lost joints of two fingers by drop hammer falling on them. |
| 39 | " .. | Shultz Bros..... | do .. | Man ..... | .... | Tip of thumb cut off by jointer. |
| 40 | " 9 | Hamilton Bridge & Tool Co. | Hamilton... | Jno. Kenney ..... | .... | Eye injured by piece of iron striking it; idle two weeks. |
| 41 | " 20 | Massey Mfg. Co.. | Toronto .... | B. Marshman (fatal) | .... | Struck by board thrown by circular saw, causing injuries which in a few weeks resulted in death. |
| 42 | " 31 | Brodie & Co ..... | Hespeler ... | Wm. Andrews.... | 20 | Third finger of left hand caught in sliding gear and cut open. |
| 43 | June .. | Perry & Black.... | Fergus..... | J. Crawford..... | 30 | First finger of left hand cut off by shingle saw; the block jerked into the saw. |
| 44 | " .. | Brush & Co. ... . | Toronto .... | Man ..... | .... | Arm cut by circular saw. |
| 45 | " .. | Ontario Worsted Co. | Elora ... | Jno. Hull ..... | 15 | First joint of first finger taken off by gears on carding machine. |
| 46 | " 9 | J. Mundell . .. | do ..... | F. Bryant ..... | 30 | Finger cut off by circular saw. |
| 47 | " 9 | Ontario Rolling Mills Co. | Hamilton .. | Henry Paxton.... | 35 | Great toe smashed by bar of iron falling on it. |
| 48 | " 11 | do do .. | do .. | Oliver Bessey .... | 40 | Great toe smashed by bar of iron falling on it. |
| 49 | " 12 | A. A. Bartholmes & Co. | Toronto .... | Geo. Girvin ..... | 18 | Four fingers and part of thumb of left hand cut off by circular saw in reaching over to pull out a stick. |
| 50 | " .. | Jas Hay & Co.... | Woodstock.. | Jas. Turnbull .... | .... | Split thumb nail by circular saw. |
| 51 | " 18 | Gale Mfg. Co..... | Toronto .... | Miss B. McCloarty | 22 | Hair wound around overhead shaft; report says: "Frightened, not hurt;" but an action for compensation is now pending. |
| 52 | " 27 | Geo. Morrison.... | Hamilton .. | Wm Irvine (fatal) | 33 | Killed by tackling for hoisting smokestack giving away and falling on his head; lived 24 hours. |
| 53 | July 2 | A. E. Bisnett .... | Blenheim .. | Alan Worts ..... | 55 | Lost four fingers of right hand and three of left hand by edging saw, where he had no business to be. |
| 54 | " .. | Dick, Ridout & Co. | Toronto .... | Girl ..... | .... | Finger caught in a string and wound around shaft. |
| 55 | " .. | L. Hahn.. ..... | Hamburg... | Henry Kalte..... | .... | Left hand badly cut by jointer. |
| 56 | " 14 | London Furniture Co. | London .... | F. Ball..... | 33 | Lost part of one finger and one badly cut by planer; idle three weeks. |
| 57 | " 28 | H. H. Shaver..... | Quin..... | Amos Blue . ..... | 33 | Three fingers of right hand injured by swing saw so as to require amputation. |
| 58 | Aug. 2 | Toronto Terra Cotta Co. | Near Milton | G. Stevenson (fatal) | 11½ | Fell from above into a mixer and was instantly killed. |
| 59 | " 5 | Ontario Rolling Mill Co. | Hamilton . | Chas. Minty ... . | 45 | Three fingers crushed between chain and pulley of blueing machine, seven feet above the floor. |
| 60 | " 14 | do do .. | do .. | David James ..... | 16 | Face and body burned by explosion of coal oil. |
| 61 | " 20 | *Times* Printing Co. | do .. | Alex. Lockie..... | 30 | Standing inside printing press frame, a boy fell against the belt shifter and started the press; Lockie was jammed between the traversing platten and frame. |

ACCIDENT REPORT FOR WESTERN DISTRICT, 1890.—*Con.*

| No. | Date. | Employer. | Place. | Person injured. | Age. | Particulars. |
|---|---|---|---|---|---|---|
| 62 | Aug. 28 | Ontario Cotton Co. | Hamilton .. | Geo. Beal ..... | 15 | Brush slipped while brushing cards and finger nail crushed in small gears. |
| 63 | " 22 | J. B. Smith & Sons | Toronto .... | W. J. Porter.... | 32 | Lost first joint of thumb by circular saw. |
| 64 | Sept. 1 | Brodie & Co..... | Hespeler ... | S. Englehart..... | 60 | Badly cut finger of left hand by circular saw. |
| 65 | " 5 | Globe Furniture Co. | Walkerville. | D. C. Benjamin .. | .... | Third finger of left hand mangled in buzz planer. |
| 66 | " 6 | McClary Mfg. Co. | London .... | Jas. Reid..... | 35 | Overloading elevator; gears stripped their teeth and platform fell thirty feet with him and a ton of castings; was badly bruised about chest and throat. |
| 67 | " 16 | C. Turnbull & Co. | Galt..... | Peter Easton..... | 16 | Careless oiling; left arm cut and torn; idle seven weeks. |
| 68 | " 26 | Craven Cotton Co. | Brantford .. | David Atcheson .. | 13 | Riding on elevator with a foot projecting over platform, came in contact with frame work of shaft: foot was bruised. |
| 69 | " .. | Ontario Cotton Co. | Hamilton .. | F. McConnell .... | 21 | Finger caught between calender rolls; one broken and one bruised. |
| 70 | " 29 | Penman Mfg. Co.. | Paris. .... | Alice Somers..... | .... | Left hand caught in press; all fingers will be stiff; idle three months. |
| 71 | July 19 | J. H. Still..... | St. Thomas. | D. Trainor (fatal).. | 27 | Killed in trying to put belt on pulley on main shaft from the floor by a long stick which was struck by an arm of pulley and driven with force against his abdomen, causing inflammation to set in and death three days after. |
| 72 | Oct. 7 | Ontario Cotton Co. | Hamilton .. | Wm. Cook ..... | 24 | Foot slipped and he fell into hot dye vat; arms and chest badly scalded. |
| 73 | " 9 | E. T. Wright & Co. | do .. | Jas. Thompson ... | 17 | Cleaning gears in motion; right hand crushed and amputated. |
| 74 | " 13 | Galt Axle Works.. | Galt..... | Herbert Keith.... | 16 | Right hand caught in cogs under table of drill in trying to stop it, causing loss of two middle fingers. |
| 75 | " 20 | Oriental Laundry. | Toronto .... | Jessie Palmer .... | 20 | Right hand caught between rollers of mangle, cleaning in motion with guard off; hand badly bruised; idle two weeks. |
| 76 | Oct. 24 | J. B. Smith & Sons | Toronto .... | Fred Perkins .... | 16 | Two small bones in back of hand broken by core driver, at which machine he had no need to be. |
| 77 | " 28 | Taylor & Scott... | do .... | L. Henderson .... | 25 | Hand slightly cut by circular saw. |
| 78 | " 29 | Ontario Worsted Co. | Elora ..... | Miss Frankish.... | 17 | First joint of index finger taken off; caught between rollers of spinning frame. |
| 79 | " 31 | A. Harris, Son & Co. | Brantford .. | Thos. McIlroy.... | 33 | Caught in gear of rumbler and shoulder dislocated. |
| 80 | " 27 | Robt. Stewart.... | Guelph .... | Levi Peer ..... | 43 | Trying an experiment with crude oil to clean the boiler; an explosion followed, burning both men about hands and face. |
| 81 | " 27 | do .... | do .... | Jas. Condy .... | 33 | |
| 82 | Nov. 1 | Shannon Shingle Mfg. Co. | Toronto .... | Wm. Tobin (fatal) | 33 | Bolt of wood came improperly in contact with the shingle saw, which thereby was broken and a large piece of the saw flew off and struck Tobin in the side, cutting in through several ribs and cutting a piece out of the liver, causing death in an hour. |
| 83 | " 8 | Mason & Risch.. | do .... | Michael Derian .. | 29 | Lost part of finger in jointer. |
| 84 | " 22 | Hamilton Bridge Co. | Hamilton .. | Jas. Tyness ..... | .... | Iron plate fell on his foot, bruising it. |
| 85 | " 27 | London Furniture Mfg. Co. | London .... | Rich. Greenwood. | 60 | Attending a tenoner, a chip 1-16 inch square flew off and struck him in one eye, causing loss of its sight; idle two weeks. |

ACCIDENT REPORT FOR WESTERN DISTRICT, 1890.—*Con.*

| No. | Date. | Employer. | Place. | Person injured. | Age. | Particulars. |
|---|---|---|---|---|---|---|
| 86 | Nov. 28 | Imperial Oil Co.. | London .... | Samuel McDowell, (fatal). | 38 | In raising a condenser tank with jack screws, he went under and tank fell on him, killing him. |
| 87 | Dec. 2 | Jas. Naylor & Son. | Essex Centre | Wm. Patterson .. | .... | Left arm broken below elbow and head badly cut by butting saw; he was soaping driving belt when the hand was drawn in between belt and pulley, bringing his head on the saw. |
| 88 | " 4 | Wortman & Ward. | London .... | S. Haight ..... | 45 | Circular saw knocked a stick against his fingers; two were broken; third and fourth were mashed and since amputated. |
| 89 | " 8 | Brodie & Co... .. | Hespeler .. | Wm. Baker ..... | 28 | While reaching to place glass oiler on hanger lost his ballance and fell, crushing the glass in his hand and cutting it badly. |
| 90 | " 3 | Jno. Crowe ..... | Guelph .... | Wm. Godfrey .. | .. | Badly burned in various parts of the body by molten iron, owing to the use of a rusty skimmer; idle from nine days to three weeks. |
| 91 | " 3 | " .. .. | do .... | F. Dingnam.... | .. | |
| 92 | " 3 | " ..... | do .... | W. Bard ..... | .. | |
| 94 | " 17 | Burr Bros..... | Guelph .... | Chas. Davidson .. | 14 | Taking hold of elevator cable as he on the platform was ascending and cable descending his fingers were caught between cable and winding drum, and in trying to release them the fingers of other hand were also caught; the fingers of both hands were badly mangled, requiring amputation of three fingers of one hand and four fingers of the other; his chest also was badly squeezed. |
| 95 | " 8 | McDiarmid Mfg. Co. | Aylmer .... | ..... ..... | .... | Lost three fingers of right hand by gears of re-saw; he was working with them, a man put them in gear and his hand was drawn in. |

ACCIDENT REPORT FOR CENTRAL DISTRICT, 1890.

| No. | Factory. | Place. | Name of Person. | Age. | Particulars. |
|---|---|---|---|---|---|
| 1 | Hilliard & Peplow's flour mill. | Peterboro'.... | Thomas Fee(fatal) | 35 | Went to clear chute which had been choked by middlings; supposed that he stepped on frame on which gears revolved, and slipped on shaft behind the gear, and that the body had been forced through a space of four inches between the shaft and frame; body was torn in two and the intestines wound around the shaft. |
| 2 | Thomas Clark & Son's saw mill. | Windermere.. | Abraham Clark (fatal.) | 26 | Was acting as head sawyer, and while canting an extra large log on saw carriage the slack of the chain for drawing up the logs on the jack ladder struck deceased, throwing him against the saw, his head being cut off. |
| 3 | Adjuda Quarry Co. | Forks of the Credit. | John Murphy (fatal.) | 50 | Fastening guy of steam derrick broke, and he was struck on the head; killed instantly. |
| 4 | Crossfield's shingle mill. | Sturgeon Bay. | Edward S. Crossfield (fatal.) | 35 | Operating horizontal saw, with which clothing came in contact; was drawn on saw and a wound inflicted on abdomen, causing death. |
| 5 | Consumers' Gas Co. | Toronto ..... | William Miller.... | 25 | Fell off platform and was badly bruised. |
| 6 | Kemp Mfg. Co ... | do ..... | Frank Bradford .. | 17 | Second and third fingers of left hand cut off in power press. |

ACCIDENT REPORT FOR CENTRAL DISTRICT, 1890.—*Continued.*

| No. | Factory. | Place. | Name of Person. | Age. | Particulars. |
|---|---|---|---|---|---|
| 7 | Kemp Mfg. Co ... | Toronto ..... | Thomas Turner .. | 22 | Third and fourth fingers of right hand cut off in power press. |
| 8 | Ontario Rolling Mills Co. | Swansea..... | Charles Jenkins .. | .... | Stick thrown from steam pump struck him on head. |
| 9 | Ontario Rolling Mills Co. | do ..... | John Douglas..... | .... | Leg broken by fly-wheel of engine. |
| 10 | P. W. Ellis' factory. | Toronto ..... | William Hunt .. | 16 | Part of finger cut off in power press. |
| 11 | Weston Woollen Co. | Weston . . | William Webster.. | 16 | Arm torn in gear of jack. |
| 12 | Jas. Smart Mfg. Co. | Brockville ... | Dennis O'Brien ... | .... | Foot burned by molten iron ; idle four weeks. |
| 13 | Jas. Smart Mfg. Co. | do .... | Michael Casselman | .... | Foot burned by molten iron ; idle three weeks. |
| 14 | Canadian Loco. & Engine Co. | Kingston .... | Joseph Titely .... | 20 | Points of two fingers cut off in gear of drilling machine. |
| 15 | Kingston Foundry & Machine Co. | do .... | William Halliday. | 17 | Three fingers and part of forefinger of right hand cut off in gear of steam rolls. |
| 16 | Wilkinson Plough Co. | West Toronto Junction. | David Jones... . | .... | Head and arm hurt by bursting of emery wheel. |
| 17 | Ontario Bolt Works Co. | Swansea ..... | Albert Scott ..... | .... | Two fingers of left hand crushed by drop hammer. |
| 18 | Wagner, Zeidler & Co. | West Toronto Junction. | George Stephens.. | 16 | Fell down hoist and arm broken. |
| 19 | W. & J. G. Greey & Co. | Toronto ..... | J. Bousfield ..... | .... | Caught on revolving shaft, two ribs broken and minor bruises. |
| 20 | Jas. Smart Mfg. Co. | Brockville.... | John H. Shaver .. | .... | Foot burned by molten iron. |
| 21 | Jas. Smart Mfg. Co. | do .... | George Begley.... | .... | Hand caught between drill and hook ; little finger crushed. |
| 22 | Mercer Bro. & Co. | Alliston .... | George Fox ..... | 23 | Third finger of right hand cut off at second joint by circular saw. |
| 23 | Rathbun Comp'y's. shingle mill. | Deseronto .... | Jacon Luffman ... | 17 | Little finger cut off at first joint and flesh cut on third and fourth fingers by circular saw. |
| 24 | Napanee Cement Works. | Newburg..... | George Fox ... . | 14 | Kicked feed roller on hoop planer and had three toes on right foot cut off |
| 25 | Jas. Smart Mfg. Co. | Brockville.... | John Cotton .... | .... | Bar slipped while hoisting bottom of cupola; back hurt. |
| 26 | Jas. Smart Mfg. Co. | do .... | Robert Burns .... | .... | Eye burnt by molten iron. |
| 27 | Jas. Smart Mfg. Co. | do .... | Wm. Casselman .. | .... | Foot burnt by molten iron. |
| 28 | Ontario Rolling Mills Co. | Swansea .... | Philip Kelley..... | 46 | Both thighs bruised by rail rebounding while being cut by shears. |
| 29 | Sash and door factory. | Deseronto .... | William Reynolds. | 14 | Put finger in hole in bed of planer and half of finger cut off. |
| 30 | Kingston Cotton Mill. | Kingston .... | George Maxim ... | .... | Caught on shafting while cleaning ; arm and fingers burnt by friction. |
| 31 | Canada Wire Mattress Co. | West Toronto Junction. | S. J. Davey ..... | .... | Fell down hatchway and shoulder dislocated. |
| 32 | Upper Canada Furniture Co. | Bowmanville . | William Sampson. | 38 | Hand caught on rip-saw ; thumb cut off at first joint. |
| 33 | Parmenter & Bullock's factory. | Gananoque.... | Bertha McFadden. | 14 | Cleaning gear in motion and part of thumb and forefingers of left hand cut off. |
| 34 | Shingle mill..... | Deseronto .... | Leeman Foot .... | 22 | Third and fourth fingers of left hand cut off by circular saw. |
| 35 | Gibbard & Son's factory. | Napanee ..... | Colman McCoy .. | 60 | Right hand cut between second and third fingers on circular saw. |
| 36 | Jas. Smart Mfg. Co. | Brockville.... | James Doran .... | 19 | Instep of foot burned by molten iron. |
| 37 | Wilkinson Plough Co. | West Toronto Junction. | William Morton.. | .... | Severe cut on skull by piece of plough thrown from buffing wheel. |
| 38 | Firstbrook Bros'. box factory. | Toronto ..... | Alfred J. Reid.... | 17 | One finger and thumb cut by circular saw. |
| 39 | Firstbrook Bros'. box factory. | do ..... | W. M. Muir..... | 50 | Struck on abdomen by board flying off circular saw. |
| 40 | Diver's stereotype foundry. | do .... . | John Rennie ... | 18 | Finger crushed on lead machine. |
| 41 | Chew Bros'. saw mill. | Gravenhurst.. | Moses Donohue .. | 40 | Fell against splitting saw and back cut. |

ACCIDENT REPORT FOR CENTRAL DISTRICT, 1890.—*Con.*

| No. | Factory. | Place. | Name of Person. | Age. | Particulars. |
|---|---|---|---|---|---|
| 42 | Chew Bros'. saw mill. | Gravenhurst.. | Robert Lee ..... | 22 | Struck foot on circular saw; second toe of left foot cut. |
| 43 | S. Brown's shingle mill. | Bracebridge .. | George Davis .... | 13 | Hand cut on circular saw; off work two weeks. |
| 44 | Mickle & Dyment's saw mill. | Gravenhurst.. | Robert Lowrey .. | 21 | Four fingers of left hand cut by circular saw. |
| 45 | Rathbun Co's. saw mill. | Campbellford. | Owen Casey..... | 38 | Arm cut by circular saw. |
| 46 | Sylvester Bros'. factory. | Lindsay..... | Wm. C. Rogers .. | .... | Points of two fingers taken off by gear of drilling machine. |
| 47 | Polson Iron Works Co. | Owen Sound.. | A. McKierman .. | .... | Foot and leg scalded in hot water tank; four weeks off work. |
| 48 | Corbett's machine works. | do .. | Frederick Saden.. | 20 | Arm bruised in putting on belt. |
| 49 | Disney, Devlin & Co's. factory. | Hanover ..... | A. E. Hind ..... | .... | Joint of middle finger and thumb of right hand hurt by shaper. |
| 50 | Trent Valley Woollen Co's mill. | Campbellford. | Jessie Caruthers.. | 18 | Finger caught in gear and small piece of flesh taken off. |
| 51 | Rathbun Co's. tie mill. | do | Stewart Shea .... | 35 | Holder of inserted tooth saw came off; right hand cut and piece of bone taken off. |
| 52 | Hanover Furniture Co. | Hanover ..... | Robert Sillers .... | 10 | Fingers cut by circular saw; off work four weeks. |
| 53 | Revell's saw mill.. | Coboconk .... | John Pugh ..... | 40 | Two fingers of left hand cut off by circular saw. |
| 54 | Weston Woollen Co's. mill. | Weston ..... | Wm. Humphrey .... | .... | Hand caught in gear. |
| 55 | Christie, Brown & Co's. factory. | Toronto..... | Frederick Freeland | 16 | Two fingers crushed by rollers of biscuit machine. |
| 56 | Smith & Co's shoddy mill. | do ..... | Hugh Stanton... | 18 | Knee cap fractured by cylinder of rag duster. |
| 57 | R & T. Watson's factory. | do ..... | Joseph Richardson | 14 | End of finger taken off by rolls on candy machine. |
| 58 | Lovering's saw mill. | Coldwater.... | Walter Reinhart.. | 18 | Knee cut by circular saw; off work about a month. |
| 59 | Victoria Harbour Lumber Co. | Victoria Harbor. | John Belfray .... | 25 | Hip joint cut by circular saw. |
| 60 | Chew Bros'. saw mill. | Midland .... | William Nicholas. | .... | Deep cut near wrist bone by butting saw |
| 61 | Toronto & Midland Mfg. Co. | do .... | William Ball ... | .... | Thumb cut by gear. |
| 62 | Parry Sound Lumber Co's. mill. | Parry Sound.. | James Bateman .. | 32 | Arm broken by gear of live rollers from circular saw. |
| 63 | C. F. Smith, tin ware factory. | Belleville..... | Charles Chatterson | 22 | Three fingers of right hand cut off in power press. |
| 64 | C. F. Smith, tin-ware factory. | do ..... | J. Gillick ..... | 18 | Finger bruised in drop press. |
| 65 | C. F. Smith, tin-ware factory. | do . ... | C. Garrison ..... | 16 | First finger and thumb of right hand crushed by drop press. |
| 66 | Rathbun Co's shingle mill. | Deseronto .... | Dumois Bosley ... | 17 | Arm badly cut at elbow joint by circular saw. |
| 67 | Consumer's Gas Co's works. | Toronto ..... | John Hunt ..... | 35 | Piece of carbon from retort while working chisel bar struck him; eye lost. |
| 68 | Ontario Bolt Co's works. | Swansea..... | David Spaulding.. | 30 | Tip of little finger taken off by bolt machine |
| 69 | Jas. Smart Mfg. Co. | Brockville.... | John Kenvil..... | 34 | Left foot burned by molten iron. |
| 70 | Rathbun Co's. shingle mill. | Deseronto .... | E. D. Solmes .... | 24 | Third and fourth fingers cut by circular saw. |
| 71 | Rathbun Co's. shingle mill. | Deseronto .... | Caniff Kimmerly | 25 | Slipped and threw hand on circular saw; not dangerous. |
| 72 | Gilmour Co's sash and door factory | Trenton ..... | James Reddick .. | 60 | Little finger of left hand cut off at first joint by circular saw. |
| 73 | Gilmour Co's. heading mill. | do ..... | John Glass ..... | 14 | Hand caught in heading edger; cut off part of nail and end of finger. |
| 74 | Gilmour Co's. lath mill. | do ..... | John Rosseau, jr. | 16 | Arm caught in tail rollers of lath mill, flesh wound in arm. |
| 75 | Rathbun Co's. lath mill. | Deseronto .... | Peter Lewie ..... | 24 | Bone broken in hand and flesh torn by bolt flying back from lath machine. |
| 76 | Jas. Smart Mfg. Co. | Brockville.... | Martin Brayman.. | 39 | Foot burned by molten iron. |

ACCIDENT REPORT FOR CENTRAL DISTRICT, 1890.—*Continued.*

| No. | Name of Factory. | Place. | Name of person | Age. | Particulars. |
|---|---|---|---|---|---|
| 77 | Rathbun Co's. cedar mill. | Deseronto .... | William Parry.... | 45 | Both bones of right leg broken above ankle by tie caught on carriage. |
| 78 | Consumer's Gas Co's. works | Toronto ..... | James Wright.... | 32 | Shoulder dislocated by scaffold breaking. |
| 79 | Trent Valley Woollen Co's mill. | Campbellford. | Mary Linn ..... | 16 | Fingers caught in cog wheel; lost the ends of the two middle fingers. |
| 80 | Gibbard's Furniture factory. | Napanee ..... | Earl Perry ..... | 22 | Ends of two fingers taken off by buzz planer. |
| 81 | Kemp Mfg. Co's. factory. | Toronto ..... | George Gilbert.... | .... | One finger cut off in power press. |
| 82 | Rathbun Co's locomotive shops. | Deseronto .... | Fred. A. Bartells.. | 28 | Fell from scaffolding while oiling shaft; compound fracture of thigh. |
| 83 | Rathbun Co's cedar mill. | do .... | William Palmer .. | 24 | Cut in left foot by circular saw. |
| 84 | Grant, Abbott & Buell's factory. | Brockville .... | John Lilley ..... | 18 | Tip of middle finger of right hand cut off by gear of biscuit machine. |
| 85 | R. & T. Watson's factory. | Toronto ..... | Minnie Mearns .. | .. | Points of two fingers cut off by gear of lozenge machine. |
| 86 | Simpson's knitting factory. | do ..... | Fred. Tucker .... | 15 | Arm caught in cards and scratched with teeth. |
| 87 | Canada Wire Mattress Company. | West Toronto Junction .. | Arthur French ... | 17 | Caught in a belt and leg broken. |
| 88 | Simpson's knitting factory. | Toronto ..... | Robert Aikens.... | 15 | Hand caught in belt; head hurt by falling. |
| 89 | J. R. Berry & Co's. woolen mill. | Lambton Mills | George Liddle.... | 14 | Two fingers of right hand cut off by gear of mule. |
| 90 | J. P. Wagner & Co's. factory. | West Toronto Junction ... | Arthur Eagan.... | 21 | Little finger of right hand cut off by shaper. |
| 91 | Longford Mfg. Co. | Orillia..... | Norman Broughton | 22 | While grinding lever bar at grindstone, thumb caught between bar and stone; thumb nail torn out. |

PROSECUTIONS FOR OFFENCES.

| Date. | Parties Summoned | Magistrates and Place of Hearing | Nature of Offence. | Fine. | Costs. | Remarks. |
|---|---|---|---|---|---|---|
| 1890. | | | | $ | $ | |
| Feb. 13 .. | William Wesley Ward, Toronto. | G. T. Denison, Toronto. | Allowing his daughter to be employed in a factory under 14 years of age. | 2.00 | ..... | Had given a false certificate of age to employer. |
| July 21... | David McDonald, Victoria Tin Works, Toronto. | G. T. Denison, Toronto. | Employing a boy under 12 years of age. | 25.00 | 2.70 | Boy lost two fingers in gear of machine. |
| Aug. 4 ... | C. L. Owen, manager Trent Valley Woollen Company, Campbellford. | Ferris, J. P. and Gillespie, J. P., Campbellford. | Employing three females more than sixty hours in one week without permission. | 15.00 | 9.30 | Eighteen females had been so employed; Inspector laid information as against three. |
| Oct. 8.... | Neil McMillan. | McDermott, J. P. and .....J.P. Victoria Harbor. | Employing a boy under 12 years. | 1.00 | 2.35 | Inspector had cautioned both parent and employer six weeks previously against employing the same boy. |
| Oct. 8 .... | Allan McMillan. | " " | Parent of above boy. | 1.00 | 2.35 | |

# RETURN

To an Order of the House, of the 29th April, 1891, showing: 1. Total sales effected of Grammar School Lands in the Township of Proton, together with payments made on same from 6th March, 1861, to 1st July, 1867. 2. A statement of what yearly payments have been received from sales of Grammar School Lands in the Township of Proton since 1st July, 1867, and what payments were made by the Government to the Township of Proton as result of the same.

Presented to the Legislative Assembly,

By Command,

J. M. GIBSON,

*Secretary.*

Provincial Secretary's Office,
Toronto, 2nd May, 1891.

# RETURN

Of total sales effected of Grammar School Lands in the Township of Proton, together with payments made on same from March 6th, 1861, to July 1st, 1867.

| Year. | Sales. | Collections. |
|---|---|---|
| | $ c. | $ c. |
| 1861 | 303 00 | 211 20 |
| 1862 | 968 75 | 219 31 |
| 1863 | 957 35 | ..... |
| 1864 | 1,443 40 | 746 70 |
| 1865 | 539 00 | 284 81 |
| 1866 | 301 95 | 120 78 |
| 1867 | 1,037 75 | 309 64 |

D. GEO. ROSS,
Accountant.

AUBREY WHITE,
Assistant Commissioner.

RETURN of "yearly payments which have been received from sale of Grammar School Lands in the Township of Proton since July 1st, 1867, and what payments were made by the Government to the Township of Proton as result of same."

| YEAR. | Collections. | Payments to Municipality. |
|---|---|---|
| | $ c. | $ c. |
| 1867 | 570 79 | |
| 1868 | 2,768 86 | |
| 1869 | 3,057 21 | |
| 1870 | 1,210 21 | |
| 1871 | 2,247 72 | 1,097 12 |
| 1872 | 2,152 48 | 481 76 |
| 1873 | 5,945 83 | 238 90 |
| 1874 | 7,875 33 | 755 97 |
| 1875 | 4,570 68 | 742 83 |
| 1876 | 5,617 94 | 386 52 |
| 1877 | 5,518 08 | 669 28 |
| 1878 | 5,331 27 | 600 87 |
| 1879 | 3,174 01 | 160 39 |
| 1880 | 3,207 76 | 13 07 |
| 1881 | 2,240 34 | 582 32 |
| 1882 | 1,313 00 | 208 49 |
| 1883 | 2,122 10 | 249 25 |
| 1884 | 579 85 | 74 05 |
| 1885 | 624 45 | 89 52 |
| 1886 | 1,865 46 | 180 52 |
| 1887 | 1,231 40 | 189 92 |
| 1888 | 1,732 60 | 131 28 |
| 1889 | 472 22 | ..... |
| 1890 | 441 17 | 103 67 |

NOTE.—The percentage paid to municipalities is based not on the total collections as given above, but on the proportion subject to the Land Improvement Fund.

D. GEO. ROSS,
Accountant.

AUBREY WHITE,
Assistant Commissioner.

# RETURN

To an Order of the House of the 29th April, 1891, for copies of any and all resolutions of the Council of the Township of Proton, relative to Grammar School lands situated in that Township, or correspondence of the Council regarding same. Also, copies of all petitions or memorials from ratepayers of the Township of Proton which tend to show or prove that when they purchased Grammar School lands from the Government it was the distinct or implied understanding that one-fourth of the purchase money was to be returned to them as a fund for public improvements within the municipality. Also, any and all further correspondence regarding same not already brought down. Also any correspondence with the late Crown Land Agent at Durham in connection with the sale of said lands which would tend to prove or allege that a fourth of the purchase money was to be returned to the municipality to form a fund for public improvements in the township. Also, any other papers on the subject which have not been already brought down. Also, an account of the sums paid to other townships in respect of Grammar School lands therein.

Presented to the Legislative Assembly,

By Command,

J. M. GIBSON,

*Secretary.*

Provincial Secretary's Office,
Toronto, 2nd May, 1891.

# RETURN

Of copies of any and all resolntions of the Council of the Township of Proton relative to Grammar School lands situated in the township, or correspondence of the Council regarding the same. Also, copies of all petitions or memorials from ratepayers of the Township of Proton which tend to show or prove that when they purchased Grammar School lands from the Government it was with the distinct or implied understanding that one-fourth of the purchase money was to be returned to them as a fund for public improvements within the municipality. Also, any and all further correspondence regarding same not already brought down. Also, any correspondence with the late Crown Land Agent at Durham in connection with the sale of said lands, which would tend to prove or allege that a fourth of the purchase money was to be returned to the municipality to form a fund for public improvements in the township. Also, any other papers on the subject which have not been already brought down.

---

RETURN of amounts paid to municipalities (exclusive of the Township of Proton), on account of the collections from Grammar School lands subject to Land Improvement Fund, from 1st July, 1867, to 31st December, 1890.

| Year. | Payments. |
|---|---|
| | $ c. |
| 1867 to 1871 | 880 83 |
| 1872 | 1,171 19 |
| 1873 | 454 78 |
| 1874 | 592 55 |
| 1875 | 705 36 |
| 1876 | 428 90 |
| 1877 | 25 27 |
| 1878 | 26 85 |
| 1880 | 204 68 |
| 1881 | 24 70 |
| 1882 | 85 40 |
| 1883 | 348 81 |
| 1884 | 74 43 |
| 1888 | 236 30 |
| 1890 | 540 70 |

There are no resolutions, petitions, memorials or correspondence on file in the Department dealing with or referring to the Land Improvement Fund.

D. GEO. ROSS,
Accountant.

AUBREY WHITE,
Assistant Commissioner.

# RETURN

To an Order of the House of the 29th April, 1891, shewing the total collections from Confederation to the 31st day of December, 1890, on Common School Lands, together with the percentage paid to the Municipalities on account of the Land Improvement Fund.

Presented to the Legislative Assembly.

By Command,

J. M. GIBSON,
*Secretary.*

Provincial Secretary's Office,
Toronto, 2nd May, 1891.

# RETURN

Shewing the total collections from Confederation to the 31st December, 1890, on Common School Lands, together with the percentage paid to the Municipalities on account of the Land Improvement Fund.

| Year. | Collections. | Payments to Municipalities. |
|---|---|---|
| | $ c. | $ c. |
| 1867 | 26,672 34 | |
| 1868 | 115,457 73 | |
| 1869 | 128,269 92 | |
| 1870 | 94,903 82 | 59,122 43 |
| 1871 | 77,343 70 | 12,661 88 |
| 1872 | 80,967 47 | 14,636 47 |
| 1873 | 73,765 76 | 10,476 31 |
| 1874 | 101,267 09 | 17,310 63 |
| 1875 | 56,282 30 | 11,360 56 |
| 1876 | 63,635 31 | 10,432 68 |
| 1877 | 62,039 84 | 11,243 99 |
| 1878 | 55,905 53 | 10,871 08 |
| 1879 | 46,987 85 | 8,750 46 |
| 1880 | 40,243 42 | 7,522 00 |
| 1881 | 37,977 14 | 8,549 60 |
| 1882 | 29,635 77 | 5,349 49 |
| 1883 | 27,322 78 | 4,874 58 |
| 1884 | 22,537 43 | 3,898 78 |
| 1885 | 18,981 58 | 3,833 95 |
| 1886 | 17,997 26 | 3,147 58 |
| 1887 | 17,489 93 | 2,840 18 |
| 1888 | 11,395 15 | 2,146 26 |
| 1889 | 14,418 29 | 2,449 49 |
| 1890 | 11,758 24 | 2,183 22 |
| | 1,233,255 65 | 213,661 62 |

NOTE.—The percentage paid to the Municipalities is based, not on the total collections as given above, but only on the proportion subject to the Land Improvement Fund.

D. GEO. ROSS,
Accountant.

AUBREY WHITE,
Assistant Commissioner.

# UNIVERSITY OF TORONTO

—AND—

# UNIVERSITY COLLEGE.

# REVENUES AND REQUIREMENTS.

## REPORT OF A COMMITTEE

APPOINTED BY THE SENATE OF THE UNIVERSITY OF TORONTO, AND ALSO BY THE BOARD OF TRUSTEES,

*APRIL 13th, 1891.*

*TORONTO:*
PRINTED BY WARWICK & SONS, 68 & 70 FRONT STREET WEST.
1891.

# UNIVERSITY OF TORONTO.

## REPORT OF THE COMMITTEE APPOINTED BY THE SENATE AND ALSO BY THE BOARD OF TRUSTEES.

The Committee appointed under the following resolutions of the Senate and the Board of Trustees :

Senate resolutions, Saturday, January 10th, 1891 :

"(1) Resolved, that the president, the vice-chancellor and the mover (Hon. Mr. Blake) "be appointed a committee to inquire into and report upon the present and prospective "revenues and the most urgent pecuniary requirements of the University and of "University College, and as to the time, mode and order in which these requirements "should be dealt with.

"(2) Resolved, that the memorials from the lecturers in German, French and Latin, "and from the lecturers in English and Greek, and all former memorials and reports of "committees relative to the subject be referred to the above committee."

Board of Trustees resolution, Thursday, January 15th, 1891 :

"The Board of Trustees, learning that the Government desires a full report as to "the present and prospective financial condition of the University and its urgent pecuniary "requirements, and the time, mode and order in which they should be dealt with, and "that the Senate has appointed the chancellor, vice-chancellor and president a com-"mittee to inquire into and report thereon, appoints the same persons on its part a "committee to inquire into and report thereon in so far as this Board is concerned in such "inquiry."

beg to report as follows :

They have conferred with the members of the Faculty ; obtained and collected their written statements ; received various persons and deputations ; examined into numerous matters involved in the reference ; and deliberated frequently as to the course to be recommended.

They have thought it not irrelevant, but on the contrary important, to endeavour to set out some principles and theories on which, as they conceive, action should be based.

In view of the scope of the reference and of the condition of the finances, they have not attempted to frame an ideal organization, or even to dispose of all the claims forcibly presented. It seemed sufficient to deal with the more urgent claims, to an amount which there is some hope of overtaking in the course of the next two financial years, and to defer the residue till the conditions of the revenue offer some prospect of further relief.

In dealing with so great a variety of delicate and disputable points, and such a complication and competition of claims and interests, they are not so presumptuous as to affirm that they have avoided all errors of judgment ; still less can they hope that they have met everybody's wishes.

But they have taken care to embody in their report the statements laid before them, and thus to give the materials for correcting any mistakes into which they may have fallen.

The report is divided into the following parts :

PART I.

Resources.—Plan for Realization of Property.—Income.—Expectations.—Detailed Comparative Tables for Ten Years.

PART II.

*Expenditure.*

Detailed Comparative Tables for Ten Years.—Expectations.—Remarks on Tables of Income and Expenditure, including the Subject of Scholarships.

PART III.

*Buildings.*

Main Building Reconstruction.—Proposed Library Building and Books.—Museum Specimens, etc.—General Financial Results.—Biological Laboratory : Evidence and Recommendations.—Biological Museum Addition : Evidence and Recommendations.—Chemistry : Evidence and Recommendations.—Mineralogy and Geology : Evidence and Recommendations.—Gymnasium and Students' Union : Recommendation.—Residence : Evidence and Recommendation.—Convocation Hall : Recommendation.—General Financial Results.—Financial Scheme.

PART IV.

*Theoretical Arrangement of Offices.*

Associate Professors.—Representation Councils.—Appointments and Promotions.—Salaries.—Application to Existing Staff.—Retirement Fund.—Application of Regulations therefor.—Proposals for Immediate Action thereon.—Financial Results and Cash Outlay.

PART V.

*Increase and Organization of the Teaching Staff*

General Remarks and Recommendations.—Policy as to Increase of Yearly Charge.—Remarks as to Past Increases.—Detailed Comparative Tables for Ten Years.—Modern Languages (French, German, Italian and Spanish), Latin, Greek, English, Physics, Mathematics, Philosophy, Chemistry, Mineralogy and Geology, Biology, Political Science, Oriental Languages : Evidence and Recommendations.—Librarian : Evidence and Recommendation.—General Result of Recommendations in this Part.—Clerks, Assistants and Servants.

---

Unanimous Adoption of Report.

---

## PART I.

RESOURCES.—PLANS FOR REALIZATION.—INCOME.—EXPECTATIONS.—COMPARATIVE TABLES.

### RESOURCES.

The material resources of the University of Toronto and University College are composed of:

(1) Lands and buildings, and land claims.

(2) Mortgages and purchase moneys.

(3) Debentures.

(4) City payment.

(5) Fees.

(1) Lands and buildings:

(*a*) Those required and reserved for the work of the institutions, being the block of land south of Hoskin avenue and west of the Western Park Drive on which are situate the University buildings.

(*b*) The lands contiguous to the Queen's Park and College street, comprising lands rented on renewable leases; and lands open for sale or lease.

(*c*) The lands called the Upper Canada College block, bounded by King street, Adelaide street, Simcoe street and John street; open for sale or lease.

(*d*) Detached properties on York street, Queen street and Front street under lease; and some small outlying properties of trifling value.

(*e*) Land claims, including claim for allowance as ground rent for the site of the School of Practical Science; and claim for allowance as ground rent for the site of the Parliament Buildings.

(2) Mortgages as of 1st July, 1890, $562,101.54.

(3) Debentures as of same date, $385,812.38.

(4) City of Toronto, perpetual annual payment towards Chairs, of $6,000 a year, equal on a capitalization at 5 per cent., to $120,000.

(5) Fees; a varying amount, subject to large deductions for expenses of examinations. Gross estimate from $17,000 to $20,000 a year.

The present rentals of all the leased lands amount to $11,114 per annum, subject to great improvement on distant renewals. Their value, if free from these leases, would be very great; but is, of course, reduced by the low rents at present in force.

The value of the unleased lands, open for sale or lease, is from one and a quarter to one and a half millions of dollars.

The claim for an allowance in the nature of ground rent for the site of the School of Practical Science is recognized, and is dealt with later in this report.

The claim for a like allowance for the site of the Parliament Buildings is disputed; and on this, reference is made to an article by Mr. T. Hodgins, Q.C., in *The 'Varsity* of 21st January, 1888, and to Sir Daniel Wilson's Convocation address of 14th October, 1887.

It thus appears that the resources of the University, apart from the value of the lands and buildings reserved for the purposes of the institution, are so large as to put its future, under wise and prudent administration, beyond all doubt or question; and to enable it by the realization of its assets greatly to increase its efficiency.

### Plans for Realization.

Part of the block north of Hoskin avenue has been put into the market; and, although the times are dull, yet the choiceness of the situation has already enabled us to dispose of several lots; those actually sold and still under negotiation amounting to about $90,000 in price.

The property east of the Western Park Drive, near Victoria University, is being laid out, and will be put on the market shortly.

Offers have been invited for part of the Upper Canada College block, which is thought to be specially suitable for a large down-town hotel.

The lease of the Scott street property expires in 1892, when a large addition will be made to the rent.

It is proposed to give tenants of large park lots, including unoccupied ground available for good detached residences, the opportunity of building thereon on proper conditions; and for this purpose to modify the building restrictions, on condition that the University receives a share of the profit by an improved rent.

### Income.

The income of the University from all sources; including gross fees calculated at $19,000; without making any allowance for a contingent fund in connection with investments, and without reckoning on any increased receipts from land sales or rentals, is estimated at about $93,500 for the current year.

The advance of capital in connection with the Biological building has temporarily reduced the invested funds. Prudence requires the retention of a yearly sum for the formation of a contingent fund to meet possible losses on investments. To this purpose $20,000 has already been appropriated in the course of former years; and $5,000 a year should if possible be appropriated for some years to come; subject to increase as the mortgage investments increase, until a full guaranty fund is accumulated.

The present available income may be estimated at about $93,500; or, making the suggested appropriation for contingent fund, at $88,500.

### Expectations.

It is confidently hoped that within a comparatively short time the yearly income will be largely increased from the various indicated sources, and it may be reasonably expected that it will be improved before the end of the next financial year by about $12,500 or more, producing a total of $106,000; and that this improvement will be progressive in future years till the increase reaches at least $50,000 a year. But, of course, as the movement depends mainly on the saleability of Toronto lands, it is impossible to calculate its rate of progress or its extent with exactness.

### Comparative Tables.

The following tables are appended:—

Statement of capital invested on mortgages and debentures as at 30th June in each of the last ten years.

Amounts invested in each of the last ten years.

Average rate of interest actually got in.

Debentures maturing; with dates of maturity.

Revenue actually received yearly from rents for ten years.

Rentals and dates of expiry of ground leases.

Receipts on income account for the last ten years.

## UNIVERSITY OF TORONTO.

STATEMENT OF CAPITAL INVESTED IN MORTGAGES AND DEBENTURES AS AT THE 30TH JUNE EACH YEAR.

| ——— | 1890. | 1889. | 1888. | 1887. | 1886. | 1885. | 1884. | 1883. | 1882. | 1881. |
|---|---|---|---|---|---|---|---|---|---|---|
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Invested in First Mortgages..... | 562,101 54 | 588,841 43 | 580,496 35 | 575,308 10 | 551,211 79 | 409,520 86 | 260,298 87 | 232,767 98 | 212,936 91 | 177,511 17 |
| Invested in Debentures ..... | 385,812 38 | 430,121 93 | 441,068 72 | 442,315 19 | 467,353 35 | 526,947 61 | 751,664 61 | 749,802 61 | 772,740 61 | 794,656 61 |
| | 947,913 92 | 1,018,963 36 | 1,021,565 07 | 1,017,623 29 | 1,018,865 14 | 936,469 47 | 1,011,963 48 | 982,570 59 | 985,677 52 | 972,207 78 |
| REVENUE ACTUALLY GOT IN FROM ABOVE IN EACH YEAR. | | | | | | | | | | |
| Interest on Mortgages ..... | 35,757 92 | 38,143 27 | 32,666 66 | 32,027 26 | 24,533 40 | 17,178 08 | 14,906 00 | 15,253 19 | 11,757 48 | 5,250 78 |
| Interest on Debenture ..... | 23,710 87 | 24,661 49 | 23,200 87 | 26,146 75 | 28,404 72 | 42,231 90 | 43,702 73 | 43,962 60 | 47,329 86 | 45,104 93 |
| | 59,468 79 | 62,804 76 | 55,867 53 | 58,174 01 | 52,938 12 | 59,409 96 | 58,608 73 | 59,215 79 | 59,087 34 | 50,355 71 |
| AVERAGE RATE OF INTEREST ACTUALLY GOT IN AS SHEWN BY ABOVE RECEIPTS. | | | | | | | | | | |
| Average rate of nterest from Mortgages..... ..... | 6.1 p.c. | 6.58 p.c. | 5.68 p.c. | 5.81 p.c. | 6.00 p.c. | 6.6 p.c. | 6.4 p.c. | 7.17 p.c. | 6.62 p.c. | |
| Average rate of Interest from Debentures..... ..... | 5.51 p.c. | 5.6 p.c. | 5.47 p.c. | 5.6 p.c. | 5.4 p.c. | 5.6 p.c. | 5.83 p.c. | 5.7 p.c. | 5.96 p.c. | |

Average rate of interest actually got in for nine years from mortgages, 6.33 per cent.

Average rate of interest actually got in for nine years from debentures, 5.63 per cent

AMOUNTS INVESTED EACH YEAR—UNIVERSITY.

| —— | 1890. | 1889. | 1888. | 1887. | 1886. | 1885. | 1884. | 1883. | 1882. | 1881. |
|---|---|---|---|---|---|---|---|---|---|---|
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Loans | 37,036 02 | 92,104 32 | 64,183 25 | 62,712 37 | 168,057 00 | 160,915 88 | 37,086 79 | 35,367 83 | 40,335 91 | 126,497 17 |
| Invested in Debentures | 14,075 24 | ..... | 18,409 45 | 1,555 00 | 29,132 47 | 3,453 14 | 19,221 56 | 9,269 00 | 47,567 35 | ..... |
| Invested in St. George St. property | ..... | 920 65 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| do York Street property | ..... | 14,000 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| do Queen Street property | ..... | 10,500 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | 51,111 26 | 117,525 57 | 82,682 70 | 64,267 37 | 197,189 47 | 164,368 97 | 56,308 35 | 44,636 83 | 87,903 26 | 126,497 17 |

UNIVERSITY OF TORONTO.

Debentures Maturing 1891 to 1909.

| | |
|---|---|
| 1891 | $ 85,700 67 |
| 1892 | 29,646 56 |
| 1893 | 173,794 66 |
| 1894 | 8,134 36 |
| 1895 | 3,153 15 |
| 1896 | 10,132 48 |
| 1897 | 2,349 91 |
| 1898 | 12,411 42 |
| 1899 | 8,784 58 |
| 1900 | 33,207 80 |
| 1901 | 4,923 45 |
| 1902 | 4,125 88 |
| 1903 | 4,187 80 |
| 1904 | 1,253 12 |
| 1905 | 1,322 05 |
| 1909 | 9,800 00 |
| | $392,927 89 |
| 1910 | 2,433 33 |
| | $395,361 22 |

REVENUE RECEIVED YEARLY FROM RENTS.

| ——— | 1890. | 1889. | 1888. | 1887. | 1886. | 1885. | 1884. | 1883. | 1882. | 1881. |
|---|---|---|---|---|---|---|---|---|---|---|
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Rents | 2,861 20 | 2,356 93 | 1,615 33 | 1,511 67 | 940 00 | 1,041 00 | 996 75 | 973 71 | 600 00 | 913 00 |
| Rents University Park | 7,800 92 | 8,376 61 | 9,057 00 | 6,982 00 | 6,121 30 | 6,283 00 | 5,259 00 | 5,755 00 | 5,992 50 | 5,403 17 |
| | 10,462 12 | 11,733 54 | 10,672 33 | 8,493 67 | 7,070 30 | 7,324 00 | 6,246 75 | 6,728 71 | 6,592 50 | 6,316 17 |

UNIVERSITY PARK RENTS.

Statement shewing dates on which leases expire together with their annual rentals.

| Year of expiration. | Rentals of leases then expiring. |
|---|---|
| 1902 | $125 00 |
| 1904 | 75 00 |
| 1905 | 100 00 |
| 1906 | 110 00 |
| 1908 | 200 00 |
| 1911 | 100 00 |
| 1912 | 240 00 |
| 1914 | 680 00 |
| 1916 | 1,020 00 |
| 1917 | 1,015 00 |
| 1918 | 1,030 00 |
| 1924 | 300 00 |
| 1925 | 200 00 |
| 1926 | 690 00 |
| 1928 | 2,604 00 |
| | $8,489 00 |

SUMMARY OF RENTS.

| | 1st January, 1891. Amount. | Expires in |
|---|---|---|
| University Park (as above) | $8,489 00 | .... |
| Latham property | 600 00 | 1892 |
| York street " | 600 00 | 1908 |
| Queen " " | 600 00 | 1909 |
| South Lodge | 425 00 | .... |
| Bursar's office | 400 00 | .... |
| | $11,114 00 | |

## Receipts—Account Income, 10 Years.

| Account. | 1890. | 1889. | 1888. | 1887. | 1886. | 1885. | 1884. | 1883. | 1882. | 1881. |
|---|---|---|---|---|---|---|---|---|---|---|
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Interest on purchase money | 859 72 | 1,081 97 | 1,709 19 | 1,645 70 | 1,936 75 | 2,036 89 | 2,600 04 | 3,057 26 | 3,384 69 | 4,208 50 |
| " loans | 35,757 92 | 38,143 27 | 32,666 66 | 32,027 26 | 24,533 40 | 17,178 06 | 14,906 00 | 15,253 19 | 11,757 48 | 5,250 78 |
| " debentures | 23,710 87 | 24,661 49 | 23,200 87 | 26,146 75 | 28,404 72 | 42,231 09 | 43,702 73 | 43,962 60 | 43,329 86 | 45,104 93 |
| " bank balances | 1,070 01 | 1,017 68 | 745 20 | ..... | 734 42 | 75 04 | ..... | ..... | ..... | 388 39 |
| Rents | 2,861 20 | 2,356 93 | 1,615 33 | 1,511 67 | 949 00 | 1,041 00 | 996 75 | 973 71 | 600 00 | 913 00 |
| " University Park | 7,800 92 | 8,376 61 | 9,057 00 | 6,982 00 | 6,121 30 | 6,283 00 | 5,250 00 | 5,755 00 | 5,992 50 | 5,403 17 |
| Pasturage | 17 00 | 39 00 | 45 15 | 144 41 | 197 09 | 300 66 | 278 25 | 151 20 | 115 28 | 297 64 |
| Fees—University College | 17,515 84 | 12,764 21 | 12,503 63 | 13,431 00 | 11,965 04 | 11,673 96 | 10,373 08 | 10,761 87 | 6,578 50 | 6,596 50 |
| City grant | 6,000 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Transfer fees | 64 00 | 56 00 | 62 50 | 51 50 | 17 00 | 43 89 | 23 00 | 33 00 | 70 50 | 80 75 |
| Dividend bank stock | 24 50 | 24 50 | 34 71 | 24 50 | 26 25 | 28 00 | 28 00 | 28 00 | 28 00 | 28 00 |
| Casual accounts (See Note "A") | 214 21 | 246 00 | 77 67 | 150 00 | 4 24 | ..... | 1 25 | 7 40 | 28 00 | 17 00 |
| | 95,896 19 | 88,766 66 | 81,717 91 | 82,114 79 | 74,889 21 | 80,892 40 | 78,159 10 | 70,983 23 | 75,884 81 | 68,288 66 |
| | ..... | ..... | ..... | 386 70 | ..... | ..... | 761 89 | 1,026 15 | 345 58 | ..... |
| Less interest bank account overdrawn | ..... | ..... | ..... | 81,728 09 | ..... | ..... | 77,397 21 | 78,957 08 | 75,539 23 | ..... |
| Less interest Moss and Mulock scholarships | ..... | ..... | 15 50 | 29 00 | ..... | ..... | 280 00 | 400 00 | ..... | ..... |
| Less interest on Medical Faculty surplus | 329 70 | 208 75 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | 95,896 19 | 88,558 91 | 81,702 41 | 81,699 09 | 74,541 21 | 80,558 40 | 77,117 21 | 78,557 08 | 75,539 23 | 68,288 66 |

## Receipts.—Casual Items, 10 Years.

Note " A."

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Prince's prize closed | 105 83 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Insurances—Loans | 108 38 | ..... | 72 67 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Physical Laboratory subscription | ..... | 50 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Sale microscopes | ..... | 194 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Valuation fees | ..... | 2 00 | ..... | ..... | 4 24 | ..... | ..... | 7 40 | ..... | ..... |
| Physical Laboratory sale | ..... | ..... | 5 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Commission returned | ..... | ..... | ..... | ..... | ..... | ..... | 1 25 | ..... | ..... | ..... |
| Interest on rents | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 28 00 | 17 00 |
| Mulock scholarship—Amount re-transferred | ..... | ..... | ..... | 150 00 | ..... | ..... | ..... | ..... | ..... | ..... |
| | 214 21 | 246 00 | 77 67 | 150 00 | 4 24 | ..... | 1 25 | 7 40 | 28 00 | 17 00 |

## PART II.

*Expenditure.*

Comparative Tables for ten years.—Expectations.—Remarks on Tables of Income and Expenditure including the Subject of Scholarships.

---

### Tables.

Tables of expenditure follow, showing :—

(1) Summary of the expenditure under different heads for ten years past.

Statements of the same grouped under the proper heads as follows :

(2) Expenses of management and investment.
(3) Salaries, etc.
(4) General expenses.
(5) Buildings and grounds: maintenance, furniture, repairs, etc.
(6) Laboratories and museums : alterations and repairs.
(7) Special expenses : University.
(8) Special expenses : University College.
(9) Contingent fund.
(10) Note A—Details of expenses *re* investments.
(11) Note B—Buildings : maintenance, furniture, repairs, etc.
(12) Note C—Chemical laboratory.
(13) Note D—Biological laboratory.
(14) Note E—Physical laboratory.

EXPENDITURE FOR TEN YEARS ENDING 30TH JUNE 1890.

| | 1890. | 1889. | 1888. | 1887. | 1886. | 1885. | 1884. | 1883. | 1882. | 1881. |
|---|---|---|---|---|---|---|---|---|---|---|
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Bursar's office | 4,066 80 | 3,478 91 | 3,099 07 | 2,949 24 | 2,889 68 | 2,825 41 | 2,781 15 | 2,639 07 | 2,605 75 | 2,438 44 |
| Expenses *re* investments, etc | 986 70 | 1,096 13 | 674 04 | 568 53 | 1,523 82 | 1,289 63 | 429 13 | 461 86 | 774 66 | 1,322 86 |
| Salaries exclusive of Bursar's office and including rent of President's house | 55,825 34 | 54,032 00 | 50,902 49 | 44,607 68 | 43,332 66 | 43,022 61 | 43,197 65 | 40,143 44 | 37,124 14 | 35,970 89 |
| Pensions including gratuity to W. D. Pearman | 1,240 00 | 740 00 | 180 50 | 2,666 00 | 3,306 00 | 3,306 00 | 3,306 00 | 4,706 01 | 5,260 19 | 6,657 66 |
| Scholarships | 790 00 | 2,743 34 | 2,958 64 | 2,840 00 | 4,465 01 | 4,054 09 | 4,255 00 | 4,718 34 | 3,895 00 | 4,275 00 |
| Examiners | 5,859 66 | 4,544 81 | 3,603 32 | 3,371 01 | 3,028 60 | 2,814 09 | 2,922 30 | 3,071 56 | 2,598 95 | 2,376 82 |
| Library | 2,766 61 | 2,502 45 | 2,678 24 | 2,556 35 | 2,719 36 | 2,589 38 | 2,594 46 | 2,613 77 | 2,734 45 | 2,498 46 |
| Fuel | 1,945 00 | 1,807 40 | 1,741 64 | 1,668 47 | 1,436 25 | 1,692 20 | 1,592 73 | 1,737 85 | 1,325 00 | 1,721 00 |
| Water and gas | 555 24 | 490 05 | 387 39 | 493 91 | 305 65 | 378 57 | 192 28 | 427 74 | 418 20 | 328 62 |
| Telephones | 95 00 | 80 00 | 97 50 | 115 00 | 115 00 | 115 00 | 115 00 | 115 00 | 53 91 | ..... |
| Insurances | 831 00 | 350 00 | 1,640 04 | 50 16 | ..... | 2,008 66 | 66 00 | 40 00 | 1,712 50 | 80 00 |
| Buildings | 2,419 91 | 5,710 24 | 2,373 07 | 2,415 19 | 2,204 45 | 1,361 30 | 1,837 09 | 1,710 24 | 2,569 77 | 3,617 45 |
| Grounds | 759 95 | 771 65 | 1,039 31 | 1,338 20 | 1,230 01 | 1,133 15 | 1,281 42 | 1,538 66 | 1,414 67 | 1,821 22 |
| Chemical laboratory | 120 28 | 1,925 24 | 22 10 | 199 33 | 37 00 | 100 00 | 21 94 | 100 00 | 452 64 | 1,634 65 |
| Biological " | 2,015 30 | 1,005 12 | 3,833 17 | 1,248 98 | 709 64 | 580 97 | 477 09 | 299 65 | 420 46 | 597 01 |
| Physical " | 243 50 | 1,089 94 | 229 37 | 78 00 | 4,022 38 | 2,678 16 | 1,077 35 | 2,281 49 | 639 35 | 361 71 |
| Geological museum | 33 07 | ..... | 34 72 | 319 85 | ..... | 8 34 | ..... | ..... | ..... | 42 88 |
| Ethnological " | ..... | ..... | ..... | ..... | ..... | 7 40 | 13 80 | ..... | 2 90 | ..... |
| Stationery, University | 897 65 | 506 01 | 577 75 | 393 87 | 511 20 | 291 02 | 430 54 | 417 91 | 412 42 | 327 20 |
| Printing " | 2,724 63 | 1,679 30 | 1,777 23 | 1,613 30 | 2,006 20 | 1,237 29 | 1,428 77 | 1,332 41 | 1,443 78 | 1,775 57 |
| Sundries " | 39 33 | ..... | 109 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Advertising " | 36 60 | 78 50 | 111 37 | 102 70 | 32 64 | 67 50 | 82 75 | 77 75 | 56 70 | 88 84 |
| Incidentals " | 161 70 | 67 00 | 45 30 | 138 58 | 111 74 | 133 94 | 124 08 | 122 50 | 129 51 | 157 38 |
| Prizes " | ..... | ..... | 20 00 | 68 45 | 99 16 | 340 68 | 316 66 | 394 76 | 314 60 | 300 71 |
| Prizes, University College | 45 62 | 15 00 | ..... | 21 00 | 300 00 | 375 00 | 362 50 | 360 00 | 305 25 | 327 50 |
| Stationery " | 88 76 | 105 78 | 73 40 | 41 32 | 157 11 | 508 34 | 91 60 | 66 73 | 194 18 | 165 28 |
| Printing " | 184 00 | 186 25 | 160 30 | 244 85 | 75 35 | 689 38 | 500 60 | 249 15 | ..... | 223 20 |
| Advertising " | 19 50 | 67 50 | 63 91 | 14 69 | 14 50 | 33 00 | 85 30 | 41 50 | 16 00 | 29 00 |
| Incidentals " | 24 02 | 39 00 | 41 00 | 25 16 | 67 90 | 8 00 | 2 50 | ..... | 19 87 | 79 51 |
| | 84,746 18 | 85,111 62 | 78,382 12 | 70,149 82 | 71,701 24 | 23,440 41 | 69,585 72 | 69,726 39 | 66,884 85 | 69,218 86 |
| Set aside for contingent fund | 5,000 00 | 2,500 00 | 2,500 00 | ..... | 5,000 00 | 2,500 00 | 2,500 00 | ..... | ..... | ..... |

EXPENSES OF MANAGEMENT AND INVESTMENT.

| ACCOUNT. | 1890. | 1889. | 1888. | 1887. | 1886. | 1885. | 1884. | 1883. | 1882. | 1881. |
|---|---|---|---|---|---|---|---|---|---|---|
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Bursar's office | 4,066 80 | 3,478 91 | 3,009 07 | 2,949 24 | 2,889 68 | 2,825 41 | 2,781 18 | 2,639 07 | 2,605 75 | 2,438 44 |
| Expenses *re* investments, etc. (*See Note "A"*) | 986 70 | 1,096 13 | 674 04 | 568 53 | 1,523 82 | 1,289 63 | 429 13 | 461 86 | 748 16 | 1,322 86 |
| | 5,053 50 | 4,575 04 | 3,683 11 | 3,517 77 | 4,413 50 | 4,115 04 | 3,210 31 | 3,100 93 | 3,358 91 | 3,761 30 |
| Bursar's Office— | | | | | | | | | | |
| Amount in account as above | ,066 80 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Less returned by U.C. College after 30th June | 1,016 70 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | 3,050 10 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

## Salaries, Etc.

| Account. | 1890. | 1889. | 1888. | 1887. | 1886. | 1885. | 1884. | 1883. | 1882. | 1881. |
|---|---|---|---|---|---|---|---|---|---|---|
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Salaries exclusive of Bursar's office and including rent of President's house | 55,825 34 | 54,032 00 | 50,902 49 | 44,607 68 | 43,332 66 | 43,022 66 | 43,197 65 | 40,143 44 | 37,124 14 | 35,970 89 |
| Pensions, including gratuity to W. D. Pearman | 1,240 00 | 740 00 | 180 50 | 2,666 00 | 3,306 00 | 3,306 00 | 3,306 00 | 4,706 01 | 5,260 19 | 6,657 66 |
| | 57,065 34 | 54,772 00 | 51,082 99 | 47,273 68 | 46,638 66 | 46,328 61 | 46,503 65 | 44,849 45 | 42,384 33 | 42,628 55 |

## General Expenses.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Scholarships | 790 00 | 2,743 34 | 2,956 64 | 2,840 00 | 4,465 01 | 4,054 99 | 4,255 00 | 4,713 34 | 3,895 00 | 4,275 00 |
| Examiners | 5,839 66 | 4,544 81 | 3,603 32 | 3,271 01 | 3,028 60 | 2,814 09 | 3,922 30 | 3,071 56 | 2,598 95 | 2,376 32 |
| Library | 2,766 61 | 2,502 45 | 2,678 24 | 2,556 35 | 2,719 36 | 2,589 38 | 2,594 46 | 2,613 77 | 2,734 45 | 2,498 46 |
| Fuel | 1,945 00 | 1,807 40 | 1,741 64 | 1,668 47 | 1,436 25 | 1,692 20 | 1,592 73 | 1,737 85 | 1,325 00 | 1,721 00 |
| Water and gas | 5,555 24 | 490 05 | 387 39 | 493 91 | 305 65 | 378 57 | 192 28 | 427 74 | 418 20 | 328 62 |
| Telephones | 95 00 | 8 00 | 97 50 | 115 00 | 115 00 | 115 00 | 115 00 | 115 00 | 53 91 | ..... |
| Insurances | 831 00 | 350 00 | 1,640 04 | 50 16 | ..... .... | 2,008 66 | 66 00 | 40 00 | 1,712 50 | 80 00 |
| | 12,822 51 | 12,518 05 | 13,104 77 | 11,094 90 | 12,069 87 | 13,652 89 | 11,737 77 | 12,724 26 | 12,738 01 | 11,279 90 |

## Buildings and Grounds: Maintenance, Furniture, Repairs, Etc.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Buildings, etc., (See Note "B") | 2,419 91 | 5,710 24 | 2,373 07 | 2,415 19 | 2,264 45 | 1,361 30 | 1,837 09 | 1,719 24 | 2,569 77 | 3,617 45 |
| Grounds | 759 95 | 771 65 | 1,039 31 | 1,338 20 | 1,230 01 | 1,133 15 | 1,281 42 | 1,588 66 | 1,414 67 | 1,821 22 |
| | 3,179 86 | 6,481 89 | 3,412 38 | 3,753 39 | 3,434 46 | 2,484 45 | 3,118 51 | 3,307 90 | 3,984 44 | 5,438 67 |

LABORATORIES AND MUSEUMS: ALTERATIONS, MAINTENANCE, APPARATUS, ETC.

| ACCOUNTS. | 1890. | 1889. | 1888. | 1887. | 1886. | 1885. | 1884. | 1883. | 1882. | 1881. |
|---|---|---|---|---|---|---|---|---|---|---|
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Chemical laboratory, (See Note "C") | 120 28 | 1,925 24 | 22 10 | 199 33 | 37 00 | 100 00 | 21 94 | 100 00 | 452 64 | 1,634 65 |
| Biological " (See Note "D") | 2,015 30 | 1,005 12 | 3,833 17 | 1,248 98 | 709 64 | 580 97 | 477 09 | 299 65 | 420 46 | 597 01 |
| Physical " (See Note "E") | 243 50 | 1,089 94 | 229 37 | 78 00 | 4,022 38 | 2,678 16 | 845 90 | 2,281 49 | 639 35 | 361 71 |
| Geological museum | 33 07 | ..... | 34 72 | 319 85 | ..... | 8 34 | ..... | ..... | ..... | 42 88 |
| Ethnological " | ..... | ..... | ..... | ..... | ..... | 7 40 | 13 80 | ..... | 2 90 | ..... |
| | 2,412 15 | 4,020 30 | 4,119 36 | 1,846 16 | 4,769 02 | 3,374 87 | 1,358 73 | 2,681 14 | 1.515 35 | 2,636 25 |

SPECIAL EXPENSES—UNIVERSITY.



| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Stationery | 897 65 | 506 01 | 577 75 | 393 87 | 511 20 | 291 02 | 430 54 | 417 91 | 412 42 | 327 20 |
| Printing | 2,724 63 | 1,679 30 | 1,777 23 | 1,613 30 | 2,006 13 | 1,237 29 | 1,428 77 | 1,332 41 | 1,443 78 | 1,775 57 |
| Sundries | 30 33 | ..... | 109 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Advertising | 36 60 | 78 50 | 111 37 | 102 70 | 32 64 | 67 50 | 82 75 | 77 75 | 56 70 | 88 84 |
| Incidentals | 161 70 | 67 00 | 45 30 | 138 58 | 1,111 74 | 133 94 | 124 08 | 122 50 | 129 51 | 157 38 |
| Prizes | ..... | ..... | 20 00 | 68 45 | 99 16 | 340 08 | 316 66 | 394 76 | 314 60 | 300 71 |
| | 3,850 91 | 2,330 81 | 2,640 90 | 2,316 90 | 2,760 87 | 2,069 83 | 2,382 80 | 3,345 33 | 2,357 01 | 2,649 70 |

SPECIAL EXPENSES—UNIVERSITY COLLEGE.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Prizes, U. C. | 45 62 | 15 00 | ..... | 21 00 | 300 00 | 375 00 | 362 50 | 360 00 | 305 25 | 327 50 |
| Stationery | 88 76 | 105 78 | 73 40 | 41 32 | 157 11 | 308 34 | 91 60 | 66 73 | 194 18 | 165 28 |
| Printing | 184 00 | 186 25 | 160 30 | 244 85 | 75 35 | 680 38 | 500 60 | 249 15 | ..... | 223 20 |
| Advertising | 19 50 | 67 50 | 63 91 | 14 69 | 14 50 | 33 00 | 35 30 | 41 50 | 16 00 | 29 00 |
| Incidentals | 24 03 | 39 00 | 41 00 | 25 16 | 67 90 | 8 00 | 2 50 | ..... | 19 87 | 79 51 |
| | 361 91 | 413 53 | 338 61 | 247 02 | 614 86 | 1,404 72 | 1,042 50 | 717 38 | 535 30 | 824 49 |

SUNDRIES.

| ACCOUNT. | 1890. | 1889. | 1888. | 1887. | 1886. | 1885. | 1884. | 1883. | 1882. | 1881. |
|---|---|---|---|---|---|---|---|---|---|---|
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Contingent fund | 5,000 00 | 2,500 00 | 2,500 00 | ..... | 5,000 00 | 2,500 00 | 2,500 00 | ..... | ..... | ..... |
| **EXPENSES *re* INVESTMENTS, ETC. Note "A."** | | | | | | | | | | |
| General incidentals | 307 25 | 101 98 | 195 84 | 88 50 | 6 50 | 172 50 | 44 44 | 89 90 | 205 09 | 132 14 |
| Plans for Minister | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 50 00 | ..... | ..... |
| Arbitration *re* Victoria College | ..... | 80 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Commission on loans | 191 00 | 467 45 | 439 00 | 199 25 | 1,204 12 | 995 63 | 201 25 | 203 50 | 318 85 | 993 50 |
| Law costs | 488 45 | 415 03 | 39 20 | 88 75 | 118 39 | 91 17 | 71 69 | 118 21 | 224 22 | 190 22 |
| Insurances *re* mortgages | Cr. 108 38 | 31 67 | Cr. 72 67 | 194 81 | 194 81 | 30 33 | 111 76 | 25 | ..... | 7 00 |
| | 986 70 | 1,096 13 | 674 04 | 568 53 | 1,523 82 | 1,289 63 | 429 13 | 461 86 | 748 16 | 1,322 86 |
| **BUILDINGS—MAINTENANCE, FURNITURE, REPAIRS, ETC. Note "B."** | | | | | | | | | | |
| Buildings | 1,743 91 | 1,951 44 | 1,231 15 | 2,170 19 | 2,029 52 | 1,162 00 | 1,299 72 | 918 40 | 1,574 30 | 2,022 45 |
| (Oak flooring) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 523 99 | ..... |
| Covering steam pipes | 361 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Lecture room alterations | 325 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| New water-closets | ..... | 3,369 71 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Drains, water-closets, etc | ..... | ..... | 503 22 | ..... | ..... | 147 40 | 537 37 | ..... | ..... | ..... |
| Heating apparatus | ..... | ..... | 245 50 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Convocation Hall windows | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 444 00 | ..... | ..... |
| Observatory cottages | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 76 58 | ..... | ..... |
| Special repairs | ..... | 389 09 | 38 60 | 245 00 | 274 93 | 51 90 | ..... | 280 28 | 471 48 | ..... |
| Lecture room | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 762 14 |
| Gymnasium | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 200 00 |
| Dean's residence | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 279 99 |
| Plans for President's house | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 265 00 |
| Gas, Convocation Hall | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 67 87 |
| Furniture for examinations | ..... | ..... | 354 60 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | 2,419 91 | 5,710 24 | 2,373 07 | 2,415 19 | 2,204 45 | 1,361 30 | 1,837 09 | 1,719 24 | 2,569 77 | 2,617 45 |

## Chemical Laboratory.

Note "C."

| Account. | 1890. | 1889. | 1888. | 1887. | 1886. | 1885. | 1884. | 1883. | 1882. | 1881. |
|---|---|---|---|---|---|---|---|---|---|---|
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Chemical lecture materials | 41 25 | 93 59 | 22 10 | 199 33 | ..... | 100 00 | 21 94 | 100 00 | 76 06 | ..... |
| Chemical laboratory apparatus | 79 03 | 1,831 65 | ..... | ..... | 37 00 | ..... | ..... | ..... | ..... | ..... |
| Chemical students' apparatus | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 376 58 | 1,634 65 |
| | 120 28 | 1,925 24 | 22 10 | 199 33 | 37 00 | 100 00 | 21 94 | 100 00 | 452 64 | 1,634 65 |

## Biological Laboratory.

Note "D."

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Maintenance, museum, etc | 1,262 84 | 204 29 | 3,833 17 | 1,248 98 | 709 64 | 580 97 | 477 09 | 299 65 | 420 46 | 597 01 |
| Outfit | 466 76 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Opening expenses | 285 70 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Students' fund | ..... | 350 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Lockers | ..... | 450 83 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | 2,015 30 | 1,005 12 | 3,833 17 | 1,248 98 | 709 64 | 580 97 | 477 09 | 299 65 | 420 46 | 597 01 |

## Physical Laboratory.

Note "E."

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Maintenance | 243 50 | 260 72 | 229 37 | 78 00 | 522 38 | 221 94 | 299 90 | 247 36 | 639 35 | 361 71 |
| Electrical laboratory | ..... | 829 22 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Electrical apparatus | ..... | ..... | ..... | ..... | 3,500 00 | 2,000 00 | ..... | ..... | ..... | ..... |
| School of practical science | ..... | ..... | ..... | ..... | ..... | ..... | 231 45 | ..... | ..... | ..... |
| Optical room | ..... | ..... | ..... | ..... | ..... | 454 00 | 546 00 | ..... | ..... | ..... |
| Alterations | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2,034 13 | ..... | ..... |
| | 243 50 | 1,089 94 | 229 37 | 78 00 | 4,022 38 | 2,675 94 | 1,077 35 | 2,281 49 | 639 35 | 361 71 |

### Expectations.

It is estimated that the expenditure for the current year will be about $92,000, so closely approaching the income as to render it impossible to apply to the contingent fund more than about $1,500 out of the $5,000 appropriated to that object.

For 1892 the expenditure on the present scale will be increased by the balance of the salary of the Professor of Ethics ($2,000), and by sums for the full year's salary of officers appointed during the current year; and by a large sum for insurance on the building, two-thirds of which, however, will properly be chargeable to the succeeding two years, and by some items of maintenance.

It is conjectured that these increases will bring the expenditure for the financial year 1892, on the present scale, up to about $95,000, as against a conjectured income of $106,000, which would leave a surplus of $11,000 without providing for an appropriation for the contingent fund.

And it is with reference to this conjecture that the financial schemes for the immediate future should be based. A few months will give some indication as to its accuracy.

It will, however, be seen that if the University can, as it is hoped, make sales of its choice property to the amount of $200,000 a year for the next two or three years, or to the extent of (say) half a million of money, producing $25,000 a year, its position will be one of comparative ease; and that a much smaller result would remove all financial difficulty in the way of executing the proposals of this report. In this view account is not, as it otherwise ought to be, taken of the fact that two or three years hence the item of maintenance will be increased by the occupation of the projected buildings.

### Remarks on Tables of Income and Expenditure.

These tables show an increase amounting in ten years to about $20,000 in the charge for salaries; an increase rendered possible only by the following facts:—

*Diminution of Charge.*

| | | |
|---|---|---|
| (1) The charge for pensions, which reached $5,260 in 1882, has sunk for the time to a very low point; making a temporary saving of about | $4,000 | |
| (2) The charge for scholarships, amounting in 1883 to $4,718, has been, so far as the University is concerned, abolished, the present item of $790 representing the proceeds of private endowments; making a saving of (say) | 4,500 | |
| Total diminution of charge | | $8,500 |

*Increase of Receipts.*

| | | |
|---|---|---|
| (3) The fees have been doubled in amount and largely increased in volume, having risen from $6,578 in 1882 to $17,515 in 1890, which, however, included $692 properly belonging to the previous year, thus reducing the true receipt to $16,842, and showing an increase in gross fees (which of course is not net profit) of over | $10,000 | |
| (4) The settlement with the city provides a yearly sum of | 6,000 | |
| Increase of receipts | | 16,000 |
| Total diminution of charge and increase of gross receipts | | $24,500 |

Therefore the enlarged expenditure for salaries has not been rendered possible by any considerable expansion in the revenue from endowment; and the forecasts of the report of 1882, elsewhere referred to, have been in this regard verified; the reduction in the current rate of interest having had its effect in this as in other like cases.

### Scholarships.

As to the expenditure for scholarships, while doubt has been thrown on the utility of such expenditures under certain conditions, it is yet conceived that the establishment of moderate bursaries in connection with the matriculation examinations is plainly justifiable and expedient.

Nor must it be forgotten that competing universities provide such scholarships and also free tuitions to a very large extent.

Instances are reported in which good men, desirous to join the Provincial University, have been, since the withdrawal of our scholarships, obliged to go elsewhere in pursuit of these aids, which are so important in the frequent cases of students of narrow means.

It is of the greatest importance that the Provincial University should retain in the ranks of its students the best and brightest minds of the Province. The influence of such men is felt in the elevation of the standard of study and of culture through the whole body; it reacts favorably on the pass-men; it leavens the mass.

Again, the prestige and usefulness of the University is affected by the position taken in the world by the sons it sends out into the battle of life.

On all grounds, therefore, we must have regard to the bearings of this question.

It is not proposed at this time to recommend an alteration in the law which prevents expenditures on scholarships.

But it is thought right to bring the subject prominently into view, and to suggest that it remain open for consideration in the future; that in the meantime the attention of the friends of the University be specially directed to this channel for their liberality; and that every encouragement be given, by the establishment of free tuitions in connection with scholarships, by further legislative facilities, and otherwise, to the plans of those who may endow them.

---

## PART III

*Buildings.*

Main Building Reconstruction.—Proposed Library Building; and Books.—Museum Specimens, etc.—General Financial Results.—Biological Laboratory: Evidence and Recommendations.—Biological Museum Addition: Evidence and Recommendations.—Chemistry: Evidence and Recommendations.—Gymnasium and Students' Union: Recommendation.—Residence: Evidence and Recommendation.—Convocation Hall: Recommmendation.—General Financial Results.—Financial Scheme.

---

### Main Buildings.

The resources available for the restoration and reconstruction of the main building in part destroyed by fire on February 15th, 1890, comprise:—

| | |
|---|---|
| Insurance | $ 90,000 |
| Public grant | 160,000 |
| In all | $250,000 |

In remodelling the interior, regard was had to the present and prospective needs of the institution; to the increased and increasing numbers of students, male and female; and to the enlarged curriculum.

The space available has been devoted to meet these needs, and will adequately supply them for a considerable period, in the departments served by this building.

It became necessary to use for examination rooms the spaces of the old Library and Museum, and for lecture rooms and like purposes the space of the old convocation hall.

Every effort has been made to produce the best results at the least cost, and it is hoped that the work may be finished for a sum slightly within the amount named, without, however, providing for the replacement of the library and convocation hall, to which, of course, any surplus would be applicable. The contracts provide for completion in October. It is thought that the work will be, to a large extent, then finished.

### The Library Building.

The liberality of friends of the University, including the sister Province of Quebec, has provided a building fund of $62,000, which it has been decided to devote to the erection of a library building on the modern principles of a stack room and the seminary system.

The greatest pains have been taken to secure a satisfactory design, and the working plans are now being prepared.

The approximate estimate of cost is $65,000, so that this important building will be provided almost free of cost to the University.

### Library Books.

It is very gratifying to report our condition and prospects as to books.

This loss it was which moved our friends at home and abroad more than any other incident in our misfortune.

Our insurance is $50,000.

Subscriptions have been made to over $42,500, of which over $16,000 has been paid.

The balance is payable by instalments spread over several years, and though there will, of course, be some shrinkage, it is expected to produce a very large sum.

We have also received up to this date as presents 26,622 volumes of a very high average value.

It is expected that with these liberal aids the library can, by means of the subscriptions, be put in a condition of fair efficiency; and it is proposed to convert the insurance money into a permanent library fund to be devoted exclusively to the increase of the books.

### Museum Specimens.

Archæological, Mineralogical, Biological.

Our insurance on these was $8,000.

It is hoped that a public appeal, as soon as the new museum is opened, will produce a considerable number of specimens, to be supplemented by purchases out of the insurance money, which should be devoted to this object. Liberal promises have been made and some valuable gifts have already reached us.

### Furniture.

Our insurance on this was $4,000.

### General Result.

The general result of the foregoing details is as follows :—

(1) After the fire our resources were—

| | | |
|---|---|---|
| Insurance on building | $ 90,000 | |
| Insurance on books | 50,000 | |
| Insurance on various museum specimens | 8,000 | |
| Insurance on furniture and scientific apparatus | 4,934 | |
| | | $152,934 |
| We have received or been promised— | | |
| Legislative grant | $160,000 | |
| Subscriptions to building (devoted to library building) | 62,000 | |
| Subscriptions to library books | 42,000 | 264,000 |
| Grand total | | $416,934 |

Besides presents of books, 26,622 volumes.

With these resources we are enabled to restore the main building, improved so as to meet our altered needs ; to replace the furniture ; to build a new library, with seminary rooms ; to provide a fairly efficient library of books, and a permanent book fund ; and to restore, to a large extent, the museum specimens.

All this will be accomplished practically without trenching on the University endowment.

### Buildings for Department of Biology.

The funds for the laboratory building costing (with $466,76 for outfit) $57,126.54, have been provided as follows :—

| | |
|---|---|
| Out of surplus income | $24,965 77 |
| Advanced out of endowment | 32,166 77 |
| | $57,126 54 |

The recommendation of the Board of trustees was that the $30,000 allowed by the government to the University in respect of the old park buildings should be devoted to this object, which application would now leave to be provided for only $2,166 77, which was to be advanced out of capital and recouped out of surplus income.

The Order-in-Council, however, stated, perhaps inadvertently, that the recommendation of the Board was that the balance required, over and above $15,500 then available from surplus income, should be taken out of capital, and that the amount should be recouped out of income, and it adopted this assumed recommendation.

The $30,000 referred to has been put to the credit of the endowment fund.

In the present state of the income fund and of the demands thereon it becomes necessary to adjust this balance ; and an advantageous plan for doing so, and for settling the cost of the museum addition to this building, and of other needed buildings, forms part of this report.

The estimated cost of the museum addition is $65,000, the payments thereon, amounting up to April 18th to $54,329.28, have been made out of the capital of the endowment ; and it is proper to provide for the adjustment thereof, as well as for the erection of further necessary buildings.

As part of the museum building, and with a view to provide fully for the future expansion of the department, and to afford the amplest facilities for the study of all the subjects on the curriculum, lecture-rooms and accommodations have been provided suitable for the study of human anatomy and physiology.

The evidence on this subject is as follows:—

I. (Abstract of memorial by Dr. Macallum on the study of human anatomy.)

Cambridge (England) University. (Only examination papers accessible.)

In the natural science tripos the student is required to take human anatomy, both descriptive and practical, in his biological course. Every paper in this course contained from one to three difficult questions in human anatomy, 1887-9, and the student was compelled to show that he could dissect out any part of the body required in such a manner as to satisfy the examiners that he was a good dissector. In 1887-8 there were three questions on human anatomy on every paper (6 in number) in Part I., and there was in addition a paper on practical human anatomy. In Part II. from two to three questions (difficult ones) on human anatomy were on every paper in biology, with a paper on practical human anatomy. In 1888-9 the same is true of Part I.; in Part II. there were four examination papers on human anatomy alone in the biological course, with one paper on practical anatomy. The biological course in Cambridge is not a fuller one than in the University, except in this respect. The human body is the best subject on which the biological student can gain his accurate habits of dissection and his thorough knowledge of vertebrate anatomy, which is necessary to a good biologist, zoologist and physiologist. In this respect the Cambridge University authorities are wise, and the result is a that the Cambridge school of biologists occupies an advanced position

The dissecting room is on the University ground and very near the biological laboratory.

Melbourne, Colony of Victoria (Australia).

The degrees of this institution are esteemed almost as highly as those of the Universities of London, Cambridge and Oxford. It is only recently that the governing body has filled the chairs in the science and medical faculties, and therefore a full curriculum in these departments has not been made out. They have the buildings of the medical department, including the dissecting room, situated on the University grounds, within a stone's throw of the arts building.

This University is supported and endowed by the Government of the colony.

Edinburgh and Glasgow.

The dissecting rooms are in the wings of the main University buildings. In Edinburgh the dissecting room fronts George Square.

University College, London.

The dissecting room is here also in the main building, adjacent to chemical and physiological laboratories. As this college is not empowered to grant degrees its course of study is adapted to the needs of the student and the University examinations he proposes to take.

Yale.

In the course on comparative anatomy a series of lectures on embryology is delivered with special reference to human morphology (human anatomy), and this is compulsory on the students in biology. (Calendar, p. 130.)

University of Pennsylvania—School of Biology.

In this laboratory the student is required in the advanced course to undertake the minute dissection of a mammal, which is generally represented by the cat. In the "Handbook of Information concerning the School of Biology" there is a sort of apology

for this choice. The directors (p. 95) say : " It is not necessary to dwell on the importance to the general student of a knowledge of his own body, or on the value of such careful work upon one type to the student who intends to devote himself to more advanced work in the future." The reason doubtless for the choice made (the cat instead of human subject) is no doubt the distance between the school of biology building and the medical building

McGill College.

There is no course in biology in this institution, and comparable to that in the arts course of the University of Toronto.

The dissecting room is in the medical building round the corner of the main University building.

Johns Hopkins University, Baltimore

There is a full course on human osteology (structure of the skeleton) given by Dr. Brooks, Associate Professor of animal morphology, which is compulsory on the students of the biological department. The dissecting room is at considerable distance from the biological laboratory, and it is probably on this account that the biological student is not required to study the anatomy of the soft part of the human body. There is a course, however, for the biological students, in which the main facts of human anatomy are taught and demonstrated, and a course of lectures is given in the same line and like that followed by the professor of the department, Dr. Martin, in his " Human Body."

University of Toronto.

The curriculum requires of the pass arts student, under the head of biology, a course in the elements of human anatomy and physiology. Demonstrations are given in the subject of physiology, but except in the structure, etc., of bones (osteology) there are no demonstrations in anatomy.

In the fourth year honor biology, human anatomy (in connection with comparative anatomy) is one of the subjects a knowledge of which is exacted of the student, but owing to the great distance between the dissecting room of the medical faculty and the biological laboratory, there is a great waste of time in going to and from the former. As the average student must, in order to give himself a practical acquaintance with the other subjects of the biological course, spend over 600 hours in the laboratory—the curriculum demands 400, but that will not give the student the practical insight he requires into these subjects unless he be excessively energetic—he can, therefore, in 100 days have little spare time for anything else. In spite of this drawback half of the number of fourth year students are taking the dissecting course in the dissecting room of the medical faculty.

2. Dr. Macallum, by letter dated 7th April, 1891, expresses regret at the absence of Professor Ramsay Wright at this juncture and his hesitation in advancing himself as spokesman of the department, and encloses a *resumé* of his arguments in favor of requiring a knowledge of human anatomy from the students in the arts faculty who are taking the honor natural science course, as follows :—

(1) In the pass course of the first year in arts there is required the knowledge of the elements of human anatomy amd physiology. These two subjects are, admittedly, of a useful character to a student who takes biology once only during his undergraduate course. Whatever can be said in this respect for the pass student applies with greater force to the student taking the honor natural science course. The latter is required to have a practical acquaintance with the comparative anatomy of vertebrates, the general type of structure running through all the vertebrates; and comparison is possible on the part of the student, only when he knows the anatomy of one or more vertebrate forms thoroughly. In no one form is the structure so carefully worked out as in the

human subject, and about no other form is there obtainable in text-book shape the knowledge necessary to serve as a basis for comparison. It is only when a student is fairly well acquainted with human anatomy that he is capable of appreciating the bearings of comparative observations. From this point of view, then, human anatomy ought to be studied by the students of the honor biological course. Professor Wright holds, I know, similar views as to the relations of anatomy to his subject. The great difficulty in the way of carrying out such views has been and is the long distance between the dissecting room and the biological laboratory, and the consequently great loss of time to the student in passing between the two places. Because of this we have not done more than to recommend the fourth year biological students to take a course of dissection of the human subject. Some of them have, indeed, taken a partial course in the same this year.

(2) It may be stated that human anatomy is not a proper subject for an arts course. Regarded from the view of sentiment and, possibly, custom, probably not; yet whatever can be said in this respect against its place in the arts course may be said with apparently equal force against considering physiology as a subject of the arts course. The latter, however, passes unquestioned in the majority of the English and in the best American universities, while it is considered as a medical subject, and arbitrarily separated from biology, in the German universities.

(3) The University of Toronto in regard to its honor biological course approaches more nearly the University of Cambridge than it does any other university (with the exception perhaps of that of London.) In Cambridge a theoretical knowledge of human anatomy, and a course of dissection of the human subject are required in every one of the examinations of the natural science tripos leading to the B. A. degree. I may also add that the thoroughness of the examinations in this subject for the B. A. degree far surpasses that of the examinations for the medical student even in the University of London. As a result, I believe, of this thoroughness, the graduate of the biological course in Cambridge is more carefully trained and carries more of his training into his subsequent scientific work than is and does the graduate of a similar course in any other university.

From the very fact that it is among the leading biological schools of the world, if it is not itself the foremost one, it appears safe to say that the most progressive teachers in biology regard human anatomy as much within the domain of their subject as the anatomy of a fish or of an insect.

(4) Human anatomy, taught as it is in Cambridge, is a science, not a subject merely for qualification for the medical profession, and as a science it is taught in Oxford, Owens, Dublin, and other universities. As a science it takes its place beside physiology, botany, and zoology, as a sub-department of biology. Probably a scheme, such as that given below, may show its relations to the other subjects of the biological course, and it may make clear the necessity of cultivating, on the part of the honor biological students, the study of one as much as of the other :

- Biology..
  - Vegetable
    - Morphology (structure) (including bacteriology).
    - Embryology.
    - Physiology.
  - Animal..
    - Morphology
      - (a) Human Anatomy.
      - (b) Comparative Anatomy
      - (c) General.
    - Embryology (a) Human.
      - (b) General.
    - Physiology (a) Human.
      - (b) Comparative.

*Recommendation.*

It is expected that the number of arts students taking the indicated studies will shortly increase; but at first they will be very few. The great bulk of the students who would most directly profit by the accommodations, in the first instance, would naturally be those preparing for medicine; and it would not be proper at present to propose University provision for tuition.

The public is deeply interested in the provision of facilities for efficient training in these subjects, as also in that of bacteriology, the modern discoveries in which have opened such vast and important fields of inquiry and research in the direction of the origin and prevention of disease; and it would seem that facilities in some of the subjects may be afforded without material cost to the state, by allowing a certain use, meanwhile, of some of the accommodations of this building to the students preparing for medicine, on condition that the arts students in biology shall obtain on equal terms the benefit of the instruction; that the arts department shall enjoy such use of the premises as is requisite, and that the University shall provide, out of the forty per cent. reserved from the medical fees for running expenses, an adequate allowance for the accommodation.

The temporary use proposed is of the attics, and the occupation for two hours per day of the lecture room, and some basement accommodations; and it is proposed that for such use an allowance should be made to the University, based on the cost of that part of the building, calculating interest at 4 per cent., the rate of charge as hereafter set out.

We are satisfied that $1,200 per annum would be a just and adequate allowance on this basis.

The expense of maintenance and repairs should be borne in like proportion.

---

Department of Chemistry.

The evidence as to the needs of this department is as follows:

1. November 7th, 1890.

Letter from Professor Pike to the Senate, stating that this term, notwithstanding an increase in the number of working places in the laboratory, there remain excluded 15 students for whom no provision can be made, and that a new chemical laboratory should be immediately constructed; also, stating that the large number of lectures to be given by the professor, requiring time for preparation, prevent his taking any real share in the practical instructions, and that the whole practical work falls on a necessarily inexperienced Fellow, who is called on to teach more students simultaneously than the most experienced teacher could possibly do; and that there is an outspoken feeling of discontent among the students; and pressing the appointment of a demonstrator of chemistry who can superintend the practical instruction, and assist the professor by undertaking some of the lectures.

2. Letter from Professor Pike to the registrar, for the information of the Senate Committee, giving further details on the above subjects, stating that the time required for the delivery and preparation of his two experimental lectures per day takes, in all, about four hours; that during the lecture to one class the others are receiving their laboratory tuition, and that in consequence the professor cannot take any real share in the practical teaching; further, that the fellow has to take charge of the laboratory every day of the week from 10 a.m. to 6 p.m., has to superintend a class of 49, 41 simultaneously, of whom 40 have never been before in a laboratory; and renewing his request for the appointment of a demonstrator; and suggesting a salary such as is paid to the demonstrator of physics.

3. The report of the above Senate Committee, recommending the appointment of a demonstrator at a salary of $800.*

4. The resolution of the Senate, recommending the appointment of a demonstrator, for which appointment the Board of trustees have appropriated $400, being at the rate of $800 per year.

5 Memo. from Professor Pike, for the information of the above committee, as to the requirements of the department, based on two assumptions :

(1) On the assumption that only students in arts are to be provided for, in which case Professor Pike requires

(*a*) A laboratory to teach 100 students, with lecture rooms.

(1) for 150 students,

(2) for 50 students ;

(*b*) A demonstrator of chemistry as above mentioned.

(2) On the assumption that the department is to undertake the whole of the tuition in the faculties of arts and medicine, and elementary classes of the School of science, lectures only, he requires

(*a*) a laboratory large enough to teach 200 students practical chemistry, with lecture rooms for 300 and 100 students ;

(*b*) Besides the proposed demonstrator above mentioned, a demonstrator for the medical students, and a Fellow for them.

Professor Pike states that at present the students attending his lectures are :—

Arts.

| | | |
|---|---|---|
| Chemistry, 1st year pass and honor | 49 | |
| " 2nd, 3rd, and 4th years, honor | 49 | |
| Department of physics and mathematics | 15 | |
| | —— | 113 |

School of Science.

| | | |
|---|---|---|
| Applied chemistry | 3 | |
| Engineers, 2nd year | 23 | |
| | —— | 26 |

(To be increased to 47 next year.)

Medicine.

| | | |
|---|---|---|
| 1st year | 84 | |
| 2nd year | 74 | |
| | —— | 158 |
| Total | | 297 |

And that the students taking laboratory work, arts only, are registered up to 64, of whom 15 are excluded for want of room and of tuition. Professor Pike adds that all the medical and school of science students receive their instruction in practical chemistry from the school of science and not in the University laboratory.

6. January 14th, 1891.

Letter from Professor Pike to the registrar as to the work done in his department,

*Note.—The present salary of the Demonstrator in Physics is $1,500. His initial salary was $1,200.

and the causes of his declining to continue lecturing to the medical students; that his present work consists of lectures delivered by him, and of laboratory practice, which Dr. W. L. Miller looks after, under his supervision.

That his present lectures per week are:—

2 inorganic (arts, medicine, and School of Science),
2 advanced ( do do ),
2 elementary organic (medicals only),
3 organic (arts only),
1 special lecture to 2nd year chemical and mineralogical students.

10 in all.

That he is hard at work every day from 10 a.m. to 6.30 p.m., with not more than half an hour for lunch.

That six of the lectures are to large audiences, requiring a loud tone; and that the continuous talking in lecture-room and laboratory has so weakened his throat that even had he time he could not deliver a third lecture.

That, save one lecture to the second year men, none are given to the students in chemistry and mineralogy.

That no lectures at all are given to the 4th year men.

That the consequences are very apparent, and the effect on the students in the department in the earlier years is still worse.

That in the third year the tuition is identical with that given to the students in the natural science department, and the consequence is that the men know very little more than the natural science men who are required in addition to chemistry to pass examinations in biology and geology.

That these defects have become so glaring that it would be inconsistent with his duty to continue to deliver to medical students special lectures, the delivery of which prevents any attention to the students in arts who are to graduate in chemistry.

And that he would like an opportunity to explain in detail the work, and the absolute need of some re-arrangement of the teaching.

7. January 8th, 1891.

Report of the Senate committee appointed to consider the question of new buildings for the departments of chemistry, mineralogy and geology.

That there is a very pressing need of increased and more suitable accommodation for these departments.

That plans and statements of the necessary accommodation, as submitted to the architect by the professors, are estimated to require for chemistry from $75,000 to $100,000, and for mineralogy and geology $40,000, but it is thought that these sums may be materially reduced.

That, should an arrangement be made with the Ontario Government to pay a rent charge for the ground occupied by the School of Science after the departments cease to use the building, the rent might be set against the interest on the cost of the proposed buildings,

And that the Ontario Government might be legitimately asked to meet part of the expense of providing the required accommodation, since students in the School of Practical Science receive instruction from the officers of the departments.

8. The Report of the Senate committee on teaching facilities, mentioned earlier, to the effect that the accommodation applied for by the professors in chemistry and mineralogy and geology is urgently required and should be provided, just as soon as the financial position of the University will admit.

*Recommendation.*

This evidence makes it clear that the present temporary arrangements are wholly inadequate, and should be changed as soon as practicable.

So far as can be conjectured, without detailed plans and estimates, the requisitions of the professor would involve an expenditure (for a building adequate for the instruction of both students in arts and students in medicine) of $100,000, of which possibly $30,000 may be the amount required for students in medicine.

But it is thought that, by cutting down the size and the character of the materials and architecture to the lowest point consistent with true economy and efficiency, the cost may be reduced to (say) $80,000, of which $50,000 to $60,000 would be the amount requisite for arts, and $20,000 to $30,000 the additional amount requisite for medicine.

Thus the extent of the building requirements depends on the question raised in the evidence. whether the students in medicine are to receive their instruction with the students in arts, under the supervision of the University Professor, or with those in the School of science, under the supervision of the professor of that School, who is also Professor of Chemistry in the medical faculty, and who now conducts the practical work.

It is suggested that the latter course is, for several reasons appearing in the evidence, and on the ground of economy, as to buildings, in the present condition of the University funds, the more advantageous; and the existing accommodations of the School of science under the proposed re-arrangement will be ample.

If this view be adopted an agreement should be made under which the University should, out of the 40 per cent. of the medical fees reserved for running expenses, provide for any extra expense attending the tuition of the medical students.

This done, the building needs of the department will be limited by the requirements for students in arts.

To answer these requirements it is proposed to erect a plain brick building; and it is obvious that that this work is most urgent, and that plans should be obtained and the work put under contract the moment the necessary financial arrangements can be made.

### Department of Mineralogy and Geology.

The evidence as to the needs of this department is as follows:—

(1) November 5th, 1890.—Letter from Professor Chapman to the Registrar for the Senate Committee stating:—

(*a*) That apart from the need of an attendant, since provided for, no additional assistance as regards tuition is at present needed.

(*b*) As to accommodation, that the present accommodation is utterly insufficient, and is otherwise quite unsuitable, being in great part underground among coal cellars and water closets, unsanitary, damp, and ill-ventilated.

(2) November 10th, 1890.—Letter from Professor Chapman giving details of the required accommodation as follows:—

(1) Laboratory for second year students in arts with fittings for fifty or sixty at least.

(2) Ditto, for third year arts, fitted for thirty to forty at least; which might serve also for Fellow's room.

(3) Private laboratory adjoining, which might also serve for professor's room.

(4) Assaying room fitted for eight to ten students at least.

(5) Adjoining balance room.

(6) Small room for use of instruments, etc., for fourth year students.

(7) Store room for crucibles, muffles, and test minerals in practical use.

(8) Well-lighted room near lecture room (10) to hold a working collection of minerals, works, and fossils, for constant inspection.

(9) A well-lighted room to hang maps and prepare diagrams.

(10) A lecture room for 150 students at least, near museum (12).

(11) Additional instruments and apparatus, goniometers, stauroscopes, polariscopes, spectroscopes, gas-furnaces; those now in use being obsolete and worn out.

(12) A collection of minerals and fossils, the cost of which might be borne by the insurance on the late geological museum.

3. The report of the Senate Committee stated as number seven under the head of Chemistry.

4. The report of the Senate Committee stated as number eight under the head of Chemistry.

5. December 15th, 1890.—Letter from Professor Chapman stating that :—

(1) The present accommodation and appliances are utterly insufficient for the increasing number of students taking practical work. This compels several sub-divisions of the class of each year, necessitating repetitions by the Professor of the work; thus each student obtains only one-half or one-fourth of the instruction he would otherwise receive.

(2) The rooms for the instruction are half underground, among cellars and water-closets, unhealthy and ill-ventilated. When the furnaces are lighted the rooms are overheated, the pipes for other parts of the building being carried through the rooms over the heads of the students; at other times the rooms are excessively damp and cold. In spring and autumn iron rapidly rusts, and books and papers become wet.

(3) The only places for keeping and showing specimens constantly required to be studied, are a small passage-way and a cellar. Specimens and instruments have to be carried at almost every lecture up and down three flights of stairs, and along corridors; and there is no room for students' work between lectures.

(4) Yet the department is regarded with great interest by the public, hardly a day passing without applications for information on matters connected with the Mineralogy and Geology of the Province; thus, last October there were thirty-two such applications, and last November twenty-nine, all replied to without charge, in the interests of the University, by the Professor.

6. Professor Chapman by letter of 26th January, with reference to queries advanced at the meeting with the faculty, expresses the opinions :—

(1) That the teaching of the University and the School of Practical Science can be profitably combined, as regards his department, if there be provided a lecture room for

150 to 200 students, with separate laboratories for second year and third year students of the school and the University; but that, as the students increase in numbers, some additional assistance would be needed.

The chief drawback is that the School session ends before that of the University, thus interrupting, for the examination of the School students, the arts lectures, just when the arts students require additional instruction in view of their approaching examination; but additional assistance would meet this difficulty.

Additional assistance involves additional space. To be of real benefit, the mineralogical and assay laboratories, and the geological museum, should be open to students during the greater part of the day.

There is now but one laboratory for the work of the second and third year engineers, and the second, third and fourth year University students.

(2) As to temporary provisions for the next two years, he would willingly put up with any inconvenience and do his best to carry on the work meanwhile, if there were visible any near prospect of proper accommodation.

(3) As to the possibility of obtaining assistance from fees, he is strongly of opinion that many students are taking honor (*i.e.*, practical) work without any proper preliminary training or appreciation of the work itself. He thinks honor work in natural science should be undertaken only by students who have a special aptitude for it, and are prepared to get proper apparatus and books; but too many take up the work in a very careless and desultory manner, without any intention of continuing it, and even disposing of their instruments and books after the examination.

They come for a degree, and not for practical knowledge, and a tolerably high fee might tend to keep students of this kind from attempting work for which they are really unfitted.

Students of the second and third years pay a laboratory fee of $1 and $2, which there is always difficulty in collecting.

(4) As to the probable results of confederation :—

It will necessarily increase, and probably greatly increase, the number of science students.

And as the numbers are, apart from this, rapidly increasing, it will be utterly impossible to cope with the numbers with the present accommodation.

The subjects have so multiplied that no one subject will be able to receive more than one lecture or one practical lesson per week, a most undesirable condition for the student.

(5) The proper work of a University, as distinguished from School work, is as follows :—

(*a*) Lectures.

(*b*) Examinations based thereon.

(*c*) Any preliminary training or additional tuition required by students should be obtained from outside tutors.

(*d*) There should be ample opportunity for practical work, but this should not, as regards examinations, be compulsory, because no laboratory will accommodate more than a certain number of students, and hence, many desirous to enter will often have to wait for a vacancy.

'Honor" students have been manufactured to a most pernicious extent, at least in the scientific departments.

Nine-tenths, if not more, of the honor men in science, go out into the world, and after all the outlay involved in their tuition, do absolutely nothing to add to the reputation of the University.

*Recommendation.*

This department, so important to a province with the vast mineral resources of Ontario, suffers lamentably from the want of accommodation, and the provision of proper facilities for its work is of great consequence.

The present accommodations are temporary, inadequate, and unsuitable.

It is suggested that steps be forthwith taken to invite the co-operation of the Government with the University in the erection of a building which will be suitable for provincial purposes as well as for distinctive University work; and failing such co-operation the erection or adaptation of a suitable building by the University is recommended.

GYMNASIUM.

This is a very urgent want for students, the greater part of whose attendance is during the inclement winter months.

A gymnasium under University control, in close proximity to the class rooms, and so available during intervals between lectures, is a very important part of a University plan, and should be provided at the earliest moment.

Shortly before the fire a subscription was started among the graduates and undergraduates for the purpose, and about $3,000 is in hand.

But that great calamity, which obliged all those interested in the University to devote their means to restoration instead of improvement, has rendered it impossible to enlarge this fund.

It is proposed to erect a gymnasium with which may be combined rooms for a students union, and which may be made available as a temporary Convocation Hall, at a cost of about $20,000, leaving the supply of the apparatus and fittings to subscription.

RESIDENCE.

This is an important element of the University. It is generally agreed in University circles that the residence should be preserved and fostered as one of the forces which make for good in the student life, and in the opinion of the Senate the extension of residence at an early date is a matter of urgent importance.

The new residence of Trinity is found very attractive, as will undoubtedly be the projected residence of Victoria.

Our dormitories are too few in number and antiquated in style.

There is at present dining-room and kitchen accommodation sufficient for a much larger number of residents than the dormitories will accommodate.

A plain brick building to the north of the present residence, containing dormitories for 100, could, it is believed, be completed for about $20,000.

Subscriptions to the amount of $1,000 are in hand for this object.

The residence can and should be made, in its enlarged form, self-sustaining, as is the present residence, and can and should also (the dormitories being rented at different rates, the new higher than the old) be made to pay the interest on the cost of the addition, so that its construction will involve no charge on the income fund. This work is recommended. Certain evidence is appended.

Professor Baker as dean of residence by letter of January 24th, 1891, reports the following facts and opinions :—

(*a*) The present dining-room accommodation is ample for 100 additional residents, and the kitchen, pantry, etc., are on the same scale as the dining-room. To employ these advantageously, it seems necessary that the increased room should be obtained by the erection of a building immediately to the north of the present west wing.

(*b*) In Yale and Harvard the "Halls" consist of separate houses, and this avoidance of a very long corridor appears best to contribute to discipline. In these institutions also, the rooms are in sets of three—a sitting-room with two bed-rooms attached, suitable for two students. This arrangement could hold, along with distinct rooms that might be let at a lower rate than half that at which the sets were rented.

(*c*) The erection of a building capable of lodging 100 would supply rooms for about one-third of our students, and such partial attempt to meet the interests of the institution would seem judicious in view of the experimental character of the undertaking.

(*d*) He has consulted Mr. Dick as to the cost of a building, such as is here roughly outlined, and he believes it could be put up for $15,000 or $16,000. His estimate can scarcely include steam-fitting and plumbing.

(*e*) To secure the use of the building by our students, it would be necessary to reduce the cost of board to $3 a week (at present it is $3.50), and to rent the rooms at, say $2 a month. He is disposed to think that even at these rates the increased numbers would secure an economy of living, that would create a surplus to be used in payment of interest on the cost of the building.

## Convocation Hall.

Deeply as those who love the University regret the loss of the Convocation Hall, important as they regard it, and earnestly as they desire to see provision made for its erection, yet it is thought prudent in view of still more urgent needs to postpone the expenditure necessary for this object.

Some meeting place, however, there must be, and it is suggested, that pending the improvement of the resources of the University to be indicated in this report, the gymnasium may be utilized for the meetings of Convocation.

## Money Required; Finance.

The general result as to the money to be provided for is as follows :—

*Already Undertaken.*

| | | |
|---|---|---|
| Balance of biological laboratory not provided for out of surplus income | $32,167 | |
| Cost of biological museum addition | 65,000 | |
| | | $97,167 |

*New Buildings Proposed.*

| | | |
|---|---|---|
| Chemical building | $60,000 | |
| Gymnasium, Union, and temporary Convocation and meeting room | 20,000 | |
| Residence | 20,000 | |
| | | $100,000 |
| Grand total | | $197,167 |
| | | say $200,000. |

To adjust this amount, the following plan ie proposed :—

Legislative power exists under the University Act to issue debentures secured on University assets, to an amount not exceeding $200,000 for the construction of buildings.

The nature and extent of these assets appear in this report. They are such as to render the suggested operation absolutely secure.

It is proposed that legislative authority should be obtained by the Government to give the provincial guaranty to twenty year debentures, at four per cent., which, it is believed, can then be issued at or above par. A parliamentary mortgage in favor of the Crown of the whole assets of the University now vested in the Crown would leave it absolutely secure; the Crown could recoup itself at an hour's notice, and the provincial institution would thus, without loss to the province, be enabled to proceed in its necessary work. The interest charge would be $8,000 a year. But this sum would be reduced by the rental of part of the biological building, $1,200, and the recoupment by the residence of the interest on the cost of addition, $800, in all $2,000, to $6,000 a year.

And this balance would be further reduced by the allowance for ground rent which it is understood between the Minister of Education and the University is to be made for the site of the School of Practical Science, so soon as the University (availing itself of the new building) is able to discontinue its present occupation of that building for the Arts faculty in the department of chemistry.

Remembering that at the present time the balance advanced on the biological building entails a diminution of income (calculating interest at six per cent.) of $5,820 a year, it is clear that the combined result of these arrangements would be to provide $100,000 additional for buildings, not merely without additional expense for interest, but with an absolute saving of a considerable part of the present interest charge.

As to the capital, it appears by this report, that the realization of unproductive property will, long before the maturity of the debentures, provide for its repayment many times over, without interfering with the present investments, or reducing the present income.

There is, of course, the cost of maintenance to be considered; but against this may be set the increased attendance, and consequent increased receipts for fees, which experience shows follow increased accommodations.

Besides, it will be some time before maintenance charges begin, during which interval it is expected that the income fund will largely increase by sales.

## PART IV.

### *Theoretical Arrangement of Offices.*

Associate Professors.—Representation on Councils.—Appointments and Promotions.—Salaries.—Application to Existing Staff.—Retirement Fund.—Application of Regulations Therefor.—Proposal for Immediate Action Thereon.—Financial Results and Cash Outlay.

In considering the recommendations to be made, it seems important to suggest a theoretical arrangement towards which we should work, and in that view a scheme is presented.

#### Associate Professors.

The office of associate professor is recommended on various grounds. It provides means to meet a case in which a professor, through increasing years, becomes, though still capable of good work and not ripe for retirement, less able for full duty. It affords an opportunity for appointing or promoting to an intermediate grade in cases in which the interests of the University would be served by such promotion; but when, either from financial or other considerations, it is not thought that an appointment should be made to the office of professor. It provides a greater measure of elasticity, which may from time to time be found very useful in working out the details of management.

#### Representation on Councils.

The recommendation is approved that every associate professor should have a seat, and that the executive should be empowered to appoint any lecturer to a seat on the

council of his faculty. And it may be added that the working of each of the faculties of arts, medicine and law would be facilitated by provision for stated conferences in council of all the members of such faculty.

### Appointments.

No appointment should be made until after a fair opportunity has been given to intending applicants to prefer their claims.

No office should be established, or chair filled, or permanent engagement made, until there are funds adequate to the salary properly assigned; experience shows the errors and inconveniences resulting from such premature appointments; and therefore, for example, it is recommended to postpone the creation or filling of professorships until the funds are available, and to provide for emergencies meanwhile by the temporary appointment of additional lecturers and Fellows.

### Promotions.

The rule cannot be too clearly understood that the appointment to an office of lower grade involves no claim or expectation of a right to promotion to a higher place.

The man who is fit for the lower may be unfit for the higher work; the man of whom great expectations were entertained may fail to realize them; and the Executive must be absolutely free to choose the very best man available at the moment when the post is to be filled.

Advantages those already in the service will always have; the advantage of friendship and connection with colleagues and students; and the advantage of opportunity of showing on the spot by the work they have done, their capacity for higher work.

With these advantages all must submit to the rule *detur digniori*.

### Salaries.

It is thought that the best and most improving service can be obtained at the least outlay by the plan of lower initial salaries, increasing by regular increments.

It is not advisable to provide that the initial minimum shall be always necessarily observed, as this might on rare occasions render impossible desirable arrangements.

But it ought to be the rule.

The salaries to be suggested include the sums intended to be reserved for a retirement fund.

It is proposed that the educational staff in arts should be composed of officers of the following ranks and salaries:

#### *Professors and Associate Professors.*

*Professors.*—To be appointed at a minimum initial salary of $2,500, increasing by yearly increments of $100 to $3,200.

*Associate Professors.*—Initial salary $1,800, increasing as above to $2,500.

#### *Lecturers and Demonstrators.*

Initial salary $800, increasing as above to $1,800.

#### *Fellows.*

Salary $500.

This plan, of course, is not intended to apply to the exceptional cases of professors who give only a limited portion of their time, as those in law, or to interfere with the power to make temporary arrangements for assistance, or to affect special considerations as to salaries which may have been fixed under exceptional circumstances.

*Other Officers.*

The same principles as to salary and retiring allowances should, as far as possible, be applied to the other high officers.

And the following salaries are suggested :

| | |
|---|---|
| President (when held in connection with a professorship at the full pay of $3,200, and including allowance for house rent, thus keeping the total combined emolument at its present figures) | $1,800 |
| Librarian, initial salary | 1,200 |
| Rising to | 2,000 |
| Registrar for both University and College, initial salary | 1,000 |
| Rising to | 1,500 |
| Bursar, initial salary | 2,000 |
| Rising to, (from which for the present house room provided $400 should be deducted) | 3,000 |

In this connection a letter from the bursar is appended.

By letter of 1st April, 1891, the bursar states as follows :—

With regard to my salary as bursar : At a meeting of the Board of Trustees held on 9th January, 1890, (at which all the members were present with the exception of yourself and Mr. A. H. Campbell), the following minute was made :

"It is recommended that the bursar's salary be increased from $2,200 to $2,800 a year and that this increase date from 1st January, 1890."

This minute was subsequently communicated to the Government through the Minister of Education who replied to the effect that the matter had been laid before Council, but having regard to the great demands upon the University funds it was deemed advisable that no increase should be made at present. In addition to my salary of $2,200 I have the house in Simcoe street less therooms occupied by the office. I am allowed $100 per annum to cover the cost of heating, gas and attendance.

The salaries of this office are now :

| | |
|---|---|
| Myself | $2,200 |
| Clerk | 400 |
| Boy | 100 |
| Fuel, etc | 100 |
| | $2,800 |

In 1877 to June 30th, (the year of my appointment), the salaries were :

| | |
|---|---|
| Bursar | $2,400 |
| Accountant, etc | 1,400 |
| Messenger | 400 |
| Fuel | 90 |
| | $4 290 |

The work has *doubled* since then. I should add $130 paid to a gentleman who assisted in keeping the accounts in the evenings. The numerous statements prepared are also done out of office hours by additional assistance For years I did all this work myself altogether out of office hours without receiving a penny for it, but my health became affected by it and the work had to be done by others.

Under my supervision my clerk, F. A. Moure, is most efficient ; he only receives $400 a year ; I think he should be paid a larger salary.

When I was appointed bursar the house I occupy was in a most dilapidated condition, not habitable, and about $1,200 was expended on repairs, towards which I paid $400 ; the building was then the property of the U. C. College. Taking all things into consideration I think this sum might be returned to me.

### Application of these Salaries to the Existing Staff.

It is of course distinctly understood that there is no intention of creating any expectation of increased renumeration beyond that specified in his contract, on the part any existing officer unless and until the time arrives when, in the opinion of the executive, the resources and the interests of the institution render proper the consideration of his case, with a view to putting his name on the salary roll for an increase on the conditions as to the retirement fund specified in this report.

The following rules may be laid down:

1. Subject to the special consideration to be stated concerning the retirement fund, no increase of salary should be granted until there are surplus revenues available for the purpose.

2. No revenues should be deemed available for the purpose until the more urgent needs of the institution for additional teaching power as well as for current expenditure are provided for.

3. In dealing with individual cases, when the revenues do not admit of meeting all at the same time, reasonable regard should be had to the view that the smaller salaries of the lower grades should be earliest improved ; and that, in cases of the same grade, the condition of those longest employed should be first ameliorated.

4. Had the revenues admitted of applying the scale to all the existing cases fully and at once, the principle might be adopted of counting the former years of service of the officer, for the purpose of ascertaining what his position would be in case he had been appointed at the proposed minimum with the yearly increment ; not, of course, with a view to any suggestion of arrears ; but in order to place him for the future.

5. But, in the condition of the revenues, it may be juster and more advantageous, so soon as funds allow, to begin a system of yearly increments, thus improving gradually, yet as rapidly as the revenues permit, the position of the various officers.

### Retirement Fund.

The report of the Finance Committee adopted by the Senate on January 13th, 1882, recommended as follows :—

" It seems clear that some general equitable plan ought to be adopted, whereby contributions should be made by the Professors and other members of the staff towards a superannuation fund, and the amount of allowance and conditions of retirement declared. In this connection it would be well to consider how far the Canadian civil service superannuation system, with such modification as the difference of age on entrance involves, might serve as a basis. It is possible that the plan of reserving a portion of the salary and creating thereout a fund for each professor, bearing interest meantime, and payable, principal and interest, on retirement, might be more suitable.

In view of the recent increase in the salaries, the present time seems especially suitable for the settlement of the question."

It is greatly to be regretted that no steps have been taken to carry out this recommendation.

Many appointments have been made, several salaries have been raised, new increases have become old, and difficulties which some years ago impeded the prosperity of the University, and expenditures which it could ill afford, will probably recur in consequence of the delay.

Further delay will make matters worse, and immediate action should now be taken.

Although the appointments are during pleasure, and carry no legal right to retiring allowances, still the University Act deals permissively with the subject; precedents have been created under that Act; and, apart from this, general experience teaches that it is expedient in the case of Government and public institutions to grapple with the question.

It is proposed to treat it by establishing, as a condition of the contract of employment, a retirement fund for each officer through the retention of a portion of the sum which would otherwise have been paid over to him as remuneration. This sum is to be kept invested and reinvested by the University with its other funds; and interest at 6 per cent. per annum compounded half-yearly is to be created on the account.

To the accumulations at the credit of the account, the officer is to have no claim during his service; but on his retirement it is to be his; or on his death in the service it is to go to his family as he may direct, or, if he have no wife or children, then as he may direct.

The charge which the University undertakes of managing the fund, and securing it absolutely, with interest at 6 per cent., and without cost to the officer, while a great advantage to the officer, will be amply repaid to the University by the freedom which the provision will give for dealing promptly with cases of infirmity or incapacity, and by the saving of charges for pensions and allowances.

The following rates of reservation are suggested:

| | |
|---|---|
| For the salary up to $1,000, 5 per cent. | |
| being for $1,000 | $50 00 |
| For the part between $1,000 and $1,800, 7½ per cent. | |
| being for $800 | 60 00 |
| being for $1,800 | $110 00 |
| For the part part between $1,800 and $2,500, 10 per cent. | |
| being for $700 | 70 00 |
| being for $2,500 | $180 00 |
| For the part between $2,500 and $3,200, 15 per cent. | |
| being for $700 | 105 00 |
| being for $3,200 | $285 00 |

### Application of Regulations for Retirement Fund.

It is proposed that this plan should be compulsory with regard to—

1. All new appointments.
2. All existing appointments in respect of which increases of salary may be made, so far as such increases will provide the means of carrying out the plan as to both the existing salary and the increase.

It is to be observed that the practical working of this provision will be to apply to the retirement fund the whole of the suggested increases in the cases of professors now receiving salaries up to $3,000, and that it will bring the plan into earlier and more general, though not always into entire operation, in numerous existing cases, to the great general advantage

It is further proposed that all existing appointees shall have the option of taking the full benefit of the plan from the date of its inception.

While it is not possible to suggest that the contracts with existing officers shall be altered without their consent by the reservation of any part of the existing salaries, yet it would be reasonable, in conveying this offer to recent appointees, to intimate that the executive holds itself under no moral, any more than it is under any legal obligation, to propose any provision for retiring allowances out of the general funds for such more recent appointees as do not choose to accept this plan, in so far as it is left to their option.

### Early Commencement of Plan.

As already indicated, a considerable portion of the total increases will be absorbed in the retirement fund; and it is suggested that in the general interest any such increase (to an extent not exceeding $200) as would be in the whole or largely so absorbed, should (in order to admit of the immediate commencement of the operations of the fund, and thus to facilitate a scheme which is regarded as greatly advantageous to the University) be made at an early date, irrespective of the condition at this moment of the revenue; out of which this course will involve but a trifling outlay in cash.

Our pension list a few years ago stood at $5,260 a year.

The sooner we begin to provide against the future the better.

### Financial Results.

The financial results of this recommendation would be as follows :—

| | |
|---|---|
| (1) Five Professors. | |
| Present salaries | $3,100 00 |
| Increase to maximum | 100 00 |
| Total nominal | $3,200 00 |
| of which the whole | 100 00 |
| would be absorbed by the retirement fund, leaving the salary actually received by the professor as before | $3,100 00 |
| and leaving a balance of $185 to be paid into the fund at the professor's option. | |
| (2) Three Professors. | |
| Present salaries | $3,000 00 |
| Increase to maximum | 200 00 |
| Total nominal | $3,200 00 |
| of which the whole | 200 00 |
| would be absorbed by the fund, leaving the salary actually received as before | $3,000 00 |
| and leaving a balance of $85 to be paid into the fund at the professor's option. | |
| (3) One Professor. | |
| Present salary | $2,500 00 |
| Immediate increase | 200 00 |
| Total nominal | $2,700 00 |
| of which the whole | 200 00 |
| would be absorbed by the fund, leaving the salary actually received as before | $2,500 00 |
| leaving $10 to be paid into the fund at the professor's option. | |

(4) Bursar.

| | |
|---|---|
| Present emoluments (salary, $2,200, and house room valued at $400) | $2,600 00 |
| Immediate increase of | 200 00 |
| Total nominal | $2,800 00 |
| of which the whole | 200 00 |
| would be absorbed by the fund, leaving the emolument actually enjoyed as before | $2,600 00 |

and leaving $25 to be paid into the fund at the bursar's option.

(5) One Professor.

| | |
|---|---|
| Present salary | $2,000 00 |
| Immediate increase | 200 00 |
| Total nominal | $2,200 00 |
| of which | 130 00 |
| would be absorbed by the fund, leaving the salary actually received | $2,070 00 |

or a cash increase of $70, and completing the proportion of the fund.

(6) Six Lecturers and one Demonstrator (seven in all).

| | |
|---|---|
| Present salaries | $1,500 00 |
| Immediate increase | 200 00 |
| Total nominal | $1,700 00 |
| of which | 102 50 |
| would be absorbed by the fund, leaving the salary actually received | $1,597 50 |

or a cash increase of $97.50, and completing the proportion of the fund.

(7) Librarian.

| | |
|---|---|
| Initial salary | $1,200 00 |
| of which | 65 00 |
| would be absorbed by the fund, leaving the salary actually received | $1,135 00 |

(8) One Registrar.

| | |
|---|---|
| Present salary | $1,000 00 |
| Increase | 200 00 |
| Total nominal | $1,200 00 |
| of which | 65 00 |
| would be absorbed by the fund, leaving the salary actually received | $1,135 00 |

or a cash increase of $135, and completing the proportion of the fund.

CASH OUTLAY.

It will be noticed that the aggregate of the immediate increases to be actually received in cash is only as follows :

| | |
|---|---|
| One Professor | $70 00 |
| Six Lecturers and one Demonstrator (seven at $97.50) | 682 50 |
| Registrar | 135 00 |
| Total | $887 50 |

a sum so trifling in comparison with the general advantage to be obtained, that it may well be placed in the first order of urgency, and arranged at the earliest moment.

This matter being so arranged, the remainder of the increases should be dealt with on the general principles before laid down.

## PART V.

*Increase and Organization of the Teaching Staff.*

General Remarks and Recommendations—Policy as to Increase of Yearly Charge —Remarks as to the Past Increases—Detailed Comparative Tables for Ten Years—Modern Languages (French, German, Italian and Spanish), Latin, Greek, English, Physics, Mathematics, Philosophy, Chemistry, Mineralogy and Geology, Biology, Political Science, Oriental Languages, Evidence and Recommendations — Librarian : Evidence and Recommendations — General Result of Recommendations in this Part—Clerks, Assistants and Servants.

---

In dealing with the important and complicated subject of the increase and organization of the staff it will be convenient to refer in the first instance

(*a*) To the last general report of the Committee on Finance presented January 13th, 1882, which shows the view then taken as to the needs of the University ;

(*b*) To the plan for the formation of the confederation of Colleges laid before the Senate on January 9th, 1885, which shows the provisions then thought requisite ;

(*c*) To the University Act, R.S.O., Cap. 230, which contains the statutory provisions applicable to the case ;

(*d*) To the recent report of the Senate Committee on the subject of teaching in the pass classes.

The relevant extracts from these documents are as follows :

(*a*) The last general report of the Committee on Finance dealing with the subject referred to the present committee was presented to the Senate on January 13th, 1882, and expressed the opinion :—

"That the teaching staff should be much larger than it is at present, and should consist of separate professors or lecturers on Greek, Latin, French and Italian, German, English, Hebrew, History, Botany, Constitutional Law and Jurisprudence, Mathematics, Natural Philosophy, Mental Science, Chemistry, Physiology, Geology and Mineralogy, Zoology, Political Economy, together with a Demonstrator on Physics, a Mathematical Tutor, a Classical Tutor, and such other assistants as the numbers of certain classes might render necessary.

Besides these there should be established certain Fellowships, whose holders should have teaching functions according to the scheme proposed at a subsequent part of this report. Nor can the institution be considered complete without the establishment of an observatory, in which event there would be added a Professor of Astronomy. Such a scheme of re-organization would also necessitate a large expenditure on Library, Museums, and Laboratories.

For the purposes of the University there has for some time been the most pressing necessity for an Examination Hall. The numbers of candidates examined at the same time being now so large that they fill to overflowing Convocation Hall and all the available lecture rooms.

To all this is to be added the consideration of the question of providing facilities for the higher education of women."

(*b*) The plan for the formation of a confederation of Colleges laid before the Senate on January 9th, 1885, contained the following provisions:—

7. (*a*) University College shall afford to all students, who desire to avail themselves thereof, the requisite facilities for obtaining adequate instruction in the following subjects in the curriculum of the Provincial University, viz.: Latin, Greek, Ancient History, French, German, English, Oriental Languages, and Moral Philosophy, provided that it shall be competent to the governing body of University College to institute additional Chairs which do not exist in the University.

(*b*) Attendance on instruction provided in any of the confederating colleges, including University College, shall be accorded equal value as a condition of proceeding to any degree with attendance on the work of the University professoriate.

8. There shall be established another teaching Faculty in connection with the Provincial University, to be called the University Professoriate, which shall afford to all students of the Provincial University who desire to avail themselves thereof, the requisite facilities for obtaining adequate instruction in the following subjects, in accordance with the curriculum of such University, namely: Pure Mathematics, Physics, Astronomy, Geology, Mineralogy, Chemistry, Zoology, Botany, Physiology, Ethnology, (including Comparative Philology) History, Logic and Metaphysics, History of Philosophy, Italian and Spanish, Political Economy and Civil Polity, Jurisprudence, Constitutional Law, Engineering, and such other sciences, arts, and branches of knowledge as the Senate of the Provincial University may from time to time determine, except such subjects as are prohibited from being taught by Revised Statutes of Ontario, cap. 209, sec. 9.

9. The professors in such University faculty shall be a corporation presided over by a chairman. The same person shall be President of University College and chairman of the Faculty of the University Professoriate. University College and the Faculty of the University Professoriate shall be complementary the one to the other, and afford to all University students the requisite facilities for obtaining adequate instruction in all subjects prescribed in the curriculum of the Provincial University. If in the interests of the general objects of the confederation, it shall be found advantageous to have any subject transferred from University College to the University, or from the University to University College, it shall be competent to the governing bodies of the College and University to arrange for such transfer.

15. There shall be the following staff in University College:

One Professor of Greek.
" " " Latin.
" " " French.
" " " German
" " " English.
" " " Oriental Languages.
" " " Moral Philosophy.
" Lecturer on Ancient History.
One Tutor in Greek.
" " " Latin.
" " " French.
" " " German.
" " " Oriental Languages.
" " " English.
One Fellow in Greek.
" " " Latin.
" " " French.
" " " German.
" " " English.

Additional assistance in above subjects to be provided, so that no Honor Class shall exceed twelve, or Pass Class thirty.

16. There shall be a University Professoriate adequate to give instruction in each of the following subjects, namely :—Pure Mathematics, Physics, Geology, Astronomy, Mineralogy, Chemistry, Applied Chemistry, Zoology, Botany, Ethnology, History, Italian and Spanish, Logic and Metaphysics, History of Philosophy, Political Economy and Civil Polity, Constitutional Law, Jurisprudence, Engineering. As regards Tutors and Fellows, assistance shall be provided to the University Faculty similar to that mentioned above for the college, as may be required

(*c*) The University Act, Chap. 230, R.S.O., provides as follows :—

5. (1) There shall be established in the University of Toronto a teaching Faculty in the following subjects, viz :—Pure Mathematics, Physics, Astronomy, Geology, Mineralogy, Chemistry (Pure and Applied), Zoology, Botany, Physiology, History, Ethnology and Comparative Philology, History of Philosophy, Logic and Metaphysics, Education, Spanish and Italian, Political Science, (including Political Economy, Jurisprudence and Constitutional Law), Engineering and such other sciences, arts and branches of knowledge, including a teaching Faculty in Medicine and in Law, as the Senate may from time to time determine, unless otherwise prohibited by this Act.

77. There shall be established in the said University College a teaching Faculty, consisting of a Professor, Lecturer and Fellow, in each of the following subjects, viz :—Greek, Latin, French, German, and English, and a Professor and Lecturer in Oriental Languages, and a Professor of Moral Philosophy, and Ancient History shall be taught in connection with the classes of Greek and Latin, and a teaching Faculty may be established in such other subjects (except Divinity) not mentioned in section 5 of this Act, as by regulation made in that behalf may be determined, subject to the approval of the Lieutenant-Governor in Council.

(*d*) Report—

The committee appointed to consider and report upon the details of a plan to secure more effective teaching in connection with the pass subjects of the first and second years, beg leave to report as follows :

The committee understand that the desired object is to be attained by providing that there shall be a measure of supervision of term work in pass subjects, the change thus proposed in dealing with the pass classes being analogous to the improvements introduced into some of the honor departments where supervision of the work is now the rule. Such a change would *necessarily* involve an addition to the teaching strength in those departments where it may be found requisite to divide large classes. Apart altogether from the question of supervision, the attention of the Senate has been lately directed to the necessity of forming smaller classes, in order to secure more effective teaching in the departments of Latin, French and German. This proposal to form smaller classes, it appears to your committee, should be extended to all departments where it may be found necessary, and at the same time the experiment should be tried of exercising supervision over the work of the pass classes. With regard to such supervision, the committee are of opinion that it would be desirable to have it exercised in all the Pass subjects of the first and second years. Should it be necessary, however, on account of the expense involved, to limit the operation of the scheme, it is recommended that it be applied to the departments of languages, mathematics, and philosophy, as soon as adequate provision can be made for carrying it into effect.

On the supposition that such additions to the staff as may be required will be made in these departments, if not in all, the following scheme is proposed, with the recommendation that it be applied in the first and second years of the course :

Requirements in pass work in first and second years.

1. Students in attendance on lectures are required to obtain at least 33 per cent. on the May examination, and also 33 per cent. of the aggregate number of marks assigned for the May examination; for work done during the term, and for attendance at lectures, according to the following schedule:

| | |
|---|---|
| May examination | 100 |
| Term work | 30 |
| Attendance on lectures | 20 |
| | 150 |

2. Reports on term work in the department of English shall be based on the essay written during the session, of which five shall be required from each student. In other departments such reports shall be based on those parts of the work which the professor or lecturer may deem most appropriate as tests of proficiency. The maximum number of marks to be assigned for term work shall be 30; and no candidate shall be credited with marks below 10.

Reports of attendance at pass lectures shall be required in all departments; and marks for such attendance assigned as follows:

| | | | |
|---|---|---|---|
| For attendance at | four-fifths | 20 | marks. |
| " " | two-thirds | 13 | " |
| " " | one-half | 7 | " |

The Senate may, for good and sufficient reasons, excuse non-registered students from attendance at lectures; and shall dispense in such cases with the above requirements with regard to term work, except in the case of English.

The Senate shall, upon the report of the University or College Council, based upon the recommendation of a professor or lecturer, excuse registered students from Term work and attendance on lectures in individual subjects; but no exemption shall be allowed in the case of English.

Candidates in pass subjects shall be arranged in the annual class lists in three grades, A, B, C; the minimum for A being 75 per cent., and for B, 50 per cent.; all under 50 to be placed in class C.

In order to give some notion of the amount of additional assistance which will be required before this scheme can be introduced, a number of memoranda from members of the staff are appended. The following analysis of these statements shews what the demands are in several of the departments.

1. Staff in Greek—Prof. Hutton, a Lecturer and a Fellow, being an addition of half the services of a Fellow.

2. Staff in Latin—Mr. Dale, and two instructors, being an addition of a Lecturer and half the services of a Fellow.

3. Staff in French—Mr. Squair, and two instructors, being an addition of a Lecturer and half the services of a Fellow.

4. Staff in German—Same as in French.

5. Staff in Mathematics—Prof. Baker, two Lecturers and a Fellow, being an addition of two Lecturers.

It also appears from the annexed memoranda that under this scheme the number of pass lectures in the department of Greek in the first and second years would be ten instead of three as at present.

In the department of Latin, the total number of lectures which would be delivered by Mr. Dale and his two assistants would be about thirty.

In each of the departments of French and German, the total number of lectures per week would be about thirty-four, of which the Fellow would take about six, the remainder being taken by the lecturer and his first assistant.

All of which is respectfully submitted,

(Sgd.) J. Loudon.

February 13, 1891.

These documents show :

(*a*) That nearly ten years ago the need for expansion in the teaching staff was recognized ;

(*b*) That six years ago, on the negotiations for confederation, it was thought necessary to fix and secure the staff for University College, which staff was definitely indicated with the important provision that additional assistance should be arranged so that no honor class should exceed 12, or pass class 30 ; and that general provision was made for an adequate University Professoriate and tutorial staff ; and

(*c*) That the University Act gave the force of law to the final form adopted ; and enacted the establishment of a teaching staff in University College, consisting of a professor, lecturer, and Fellow in each of the subjects of Greek, Latin, French, German and English ; a professor and lecturer in Oriental Languages ; and a professor of Moral Philosophy ; and of a teaching Faculty (not so particularly defined) in the specified subjects to be taught in the University of Toronto.

The definite and absolute provision made as to the staff of University College is obviously to be explained by the circumstances of confederation ; and it is difficult to justify, save under the plea of absolute necessity, the delay which has taken place, and which must yet take place, in the fulfilment of the statute.

(*d*) The report of the Senate committee shows the necessity of further teaching powers.

The increase in the number of students, and the changes in, and additions to, the curriculum have intensified the need for action.

## *General Recommendation.*

In the interests of the institution the statute should be complied with as soon as practicable ; and meanwhile temporary provision should be made at the earliest possible moment to fill the gaps.

In adopting this course regard should be had, when deciding on the character and order of action, to the comparative as well as the absolute urgency of each case ; for it is important to take account of the degree in which, relatively to each other, the different branches have been recently advanced and made efficient ; so that the progress towards completion may be general on all lines.

A comparative table of the salaries and expenditures on the various branches for ten years past will be set out, and it is referred to as giving important information on this subject.

It shews, for example, that Logic, Metaphysics and Ethics, now comprising Logic and Metaphysics, History of philosophy and Ethics, have been doubled in professorial strength, and will in 1892 stand at $6,500 as against $3,600 in 1888; that Political science has been created, having three professors and a fellow, and stands at $5,500 as against nothing in 1888; that Greek has been almost doubled, having a professor, a lecturer and half a fellow as against half a professor, half a tutor and half a fellow in 1887, and stands at $4,850 as against $2,300; and that English has been largely advanced, having a professor and a lecturer as against half a professor in 1887, and stands at $4,500 as against $1,400.

On the other hand, it shews that Latin has been rather weakened, having a lecturer and half a fellow as against half a professor, half a lecturer and half a fellow in 1887, and stands at $1,750 as against $2,300; that French has been left almost stationary, having a lecturer and two-thirds of a fellow as against a lecturer and half a fellow in 1888, and stands at $1,833.33 as against $1,750. That German has been left almost stationary, having a lecturer (also librarian), and two-thirds of a fellow as against a lecturer similarly circumstanced and half a fellow in 1888, and stands at $1,333.33 as against $1,250; and that Italian and Spanish has been left almost stationary, having a lecturer and two-thirds of a fellow as against a lecturer in 1888, and stands at $1,833.33 as against $1,500 in 1888.

### Policy as to Increase of Yearly Charge.

Before proceeding to deal with specific cases it is well to state briefly the financial facts, and to explain the general principles of action which are suggested as applicable.

As already explained, there is no surplus revenue, and our income will be fully engaged, until it is enlarged by the sale of unproductive property, or by increased rents.

The exact period of the creation of a substantial surplus is uncertain, depending as it does on the land market.

But it is reasonably certain that within a brief space there will be a substantial surplus over present expenditure, which surplus will increase till it ultimately reaches at least $50,000 a year.

We cannot at this moment increase our expenditure without drawing on the capital of the endowment, a step which only considerations of the gravest and most pressing nature could justify.

Any immediate expenditure proposed must be judged and limited by this rule.

It becomes important then to ascertain,

(1) Whether there are any, and what, expenditures which should now be proposed.

(2) In what way and on what principle the surplus revenues as they become available should be applied; and thus at once to avoid the errors inevitable when isolated expenditures are sanctioned on detached views, and to let those interested know what to expect.

### Increase of Staff.

### Particular Branches.

Referring now to particular branches, it is convenient to preface their consideration by the comparative table already referred to which is as follows:—

## UNIVERSITY OF TORONTO AND UNIVERSITY COLLEGE.

### Summary of Salaries, Pensions, Etc.

| Department. | 1891. | 1890. | 1889. | 1888. | 1887. | 1886. | 1885. | 1884. | 1883. | 1882. | 1881. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 1. Bursar's office | 2,600 00 | 2,883 32 | 2,283 34 | 3,000 00 | 3,000 00 | 2,975 00 | 2,950 00 | 3,000 00 | 2,850 00 | 2,650 00 | 2,550 00 |
| 2. Library | 1,940 00 | 1,455 84 | 1,260 00 | 1,220 00 | 1,270 00 | 1,260 00 | 1,260 00 | 1,260 00 | 1,260 00 | 1,260 00 | 1,220 00 |
| 3. General as between University and University College | 3,376 00 | 3,153 00 | 3,201 00 | 3,190 66 | 3,124 00 | 3,124 00 | 3,124 00 | 3,124 00 | 3,124 00 | 3,087 50 | 2,270 00 |
| 4. Pensions | 1,240 00 | 3,240 00 | 3,240 00 | 180 50 | 2,666 00 | 3,300 00 | 3,306 00 | 3,306 00 | 4,706 00 | 5,260 16 | 4,632 66 |
| 5. University of Toronto, general | 1,640 00 | 1,640 00 | 1,656 66 | 1,640 00 | 1,640 00 | 1,600 00 | 1,640 00 | 1,640 00 | 1,640 00 | 1,450 00 | 1,350 00 |
| 6 & 7. Teaching staff, University and University College— | | | | | | | | | | | |
| Agriculture | ..... | ..... | ..... | ..... | ..... | ..... | 400 00 | 600 00 | 600 00 | 600 00 | 600 00 |
| Modern History | 2,800 00 | 2,800 00 | 2,800 00 | 2,800 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 |
| Political Science | 5,500 00 | 2,500 00 | 2,583 38 | ..... | ..... | ..... | ..... | 650 00 | 608 33 | ..... | ..... |
| Mathematics | 3,000 00 | 3,000 00 | 3,000 00 | 3,000 00 | 3,050 00 | 3,050 00 | 2,900 00 | 3,050 00 | 2,550 00 | 2,550 00 | 2,512 50 |
| Physics | 5,800 00 | 5,660 00 | 5,604 00 | 5,604 00 | 4,254 00 | 3,754 00 | 3,754 00 | 3,754 00 | 3,254 00 | 2,396 67 | 1,962 50 |
| Chemistry | 4,704 00 | 4,470 00 | 4,304 00 | 4,264 00 | 4,164 00 | 4,164 00 | 4,164 00 | 4,164 00 | 4,039 00 | 3,631 66 | 3,545 00 |
| Mineralogy and Geology | 3,700 00 | 3,412 50 | 3,600 00 | 3,600 00 | 3,600 00 | 3,600 00 | 3,600 00 | 3,600 00 | 3,100 00 | 3,100 00 | 3,025 00 |
| Biology | 6,104 00 | 5,957 34 | 5,224 00 | 5,624 00 | 4,124 00 | 4,124 00 | 4,124 00 | 4,124 00 | 4,124 00 | 3,666 66 | 3,605 00 |
| Logic, Metaphysics and Ethics | 4,500 00 | 3,250 00 | 4,466 66 | 3,600 00 | 3,600 00 | 3,600 00 | 3,600 00 | 3,600 00 | 3,100 00 | 3,100 00 | 3,025 00 |
| Greek | 4,850 00 | 4,850 00 | 4,850 00 | 4,850 00 | 2,300 00 | 2,300 00 | 2,300 00 | 2,300 00 | 2,050 00 | 2,050 00 | 2,270 85 |
| Latin | 1,750 00 | 1,750 00 | 1,650 00 | 1,750 00 | 2,300 00 | 2,300 00 | 2,300 00 | 2,300 00 | 2,050 00 | 2,050 00 | 2,270 85 |
| English | 4,500 00 | 4,000 00 | 1,500 00 | 1,500 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 |
| Italian and Spanish | 1,500 00 | 1,500 00 | 1,500 00 | 1,500 00 | 1,300 00 | 1,300 00 | 1,300 00 | 775 00 | 500 00 | 500 00 | 500 00 |
| French | 1,875 00 | 1,750 00 | 1,750 00 | 1,750 00 | 1,250 00 | 1,250 00 | 1,250 00 | 950 00 | 1,150 00 | 1,000 00 | 1,000 00 |
| German | 1,375 00 | 1,250 00 | 1,250 00 | 1,250 00 | 1,250 00 | 1,250 00 | 1,250 00 | 1,250 00 | 937 48 | 750 00 | 750 00 |
| Oriental languages | 2,000 00 | 2,000 00 | 2,583 34 | 3,000 00 | 2,875 00 | 2,000 00 | 1,500 00 | 1,500 00 | 1,500 00 | 1,500 00 | 1,500 00 |
| . University College, general | 760 00 | 760 00 | 700 00 | 760 00 | 1,010 00 | 1,010 00 | 1,010 00 | 1,010 00 | 1,010 00 | 1,010 00 | 985 00 |
| Total | 65,514 00 | 50,282 00 | 58,066 33 | 54,083 16 | 49,527 00 | 48,861 00 | 48,532 00 | 48,757 00 | 46,952 81 | 44,412 65 | 42,374 30 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Bursar's office — | | | | | | | | | | | |
| Bursar | 2,200 00 | 2,200 00 | 2,200 00 | 2,200 00 | 2,200 00 | 2,200 00 | 2,200 00 | 2,200 00 | 2,200 00 | 2,000 00 | 2,000 00 |
| Clerk at $800 | ..... | ..... | 400 00 | 800 00 | 800 00 | 775 00 | 750 00 | 800 00 | 650 00 | 650 00 | 550 50 |
| " ..... | ..... | 333 32 | 383 34 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| " 400 | 400 00 | 350 00 | 300 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Total | 2,600 00 | 2,883 32 | 3,283 34 | 3,000 00 | 3,000 00 | 2,975 00 | 2,975 00 | 3,000 00 | 2,850 00 | 2,650 00 | 2,550 00 |
| 2. Library— | | | | | | | | | | | |
| Librarian (also paid as lecturer in German) | 1,000 00 | 1,000 00 | 1,000 00 | 1,000 00 | 1,000 00 | 1,000 00 | 1,000 00 | 1,000 00 | 1,000 00 | 1,000 00 | 1,000 00 |
| Assistant Librarian, paid as Registrar. | | | | | | | | | | | |
| 1st Assistant in Library— | | | | | | | | | | | |
| J. Brebner, at $700 | 700 00 | 353 34 | 160 00 | 120 00 | 120 00 | 170 00 | 135 00 | 120 00 | 120 00 | 120 00 | 120 00 |
| (Also paid by Library committee since fire at $300.) | | | | | | | | | | | |
| Assistant at $12.50 per month for 8 months. | ..... | 62 50 | 100 00 | 100 00 | 100 00 | 100 00 | 100 00 | 100 00 | 100 00 | 100 00 | 100 00 |
| " at $10 do. do. | ..... | 40 00 | ..... | ..... | ..... | ..... | 25 00 | 40 00 | 40 00 | 40 00 | ..... |
| Delivery clerk at $15 per mo | 120 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| " " " ..... | 120 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Total | 1,940 00 | 1,455 84 | 1,260 00 | 1,220 00 | 1,220 00 | 1,270 00 | 1,260 00 | 1,260 00 | 1,260 00 | 1,260 00 | 1,220 00 |
| 3. General as between University and University College— | | | | | | | | | | | |
| President (also paid as Professor of Modern History). Salary | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 |
| President, house rent | 800 00 | 600 00 | 800 00 | 866 66 | 800 00 | 800 00 | 800 00 | 800 00 | 800 00 | 800 00 | ..... |
| | 2,200 00 | 2,003 00 | 2,200 00 | 2,266 66 | 2,200 00 | 2,200 00 | 2,200 00 | 2,200 00 | 2,200 00 | 2,200 00 | 1,400 00 |
| Janitor | 504 00 | 489 00 | 444 00 | 444 00 | 444 00 | 444 00 | 444 00 | 444 00 | 444 00 | 407 50 | 390 00 |
| Engineer, with rooms and fuel | 576 00 | 576 00 | 528 00 | 480 00 | 480 00 | 480 00 | 480 00 | 480 00 | 480 00 | 480 00 | 480 00 |
| Attendant on Lavatory at $8 per month | 96 00 | 88 00 | 29 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Total | 3,376 00 | 2,153 00 | 3,201 00 | 3,190 66 | 3,124 00 | 3,124 00 | 3,124 00 | 3,124 00 | 3,124 00 | 3,087 50 | 2,270 00 |
| 4. Pensions— | | | | | | | | | | | |
| Jno. Hirschfelder, from 10th Jan., 1889. | 1,000 00 | 1,000 00 | 500 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Geo. Goodwin | 144 00 | 144 00 | 144 00 | 84 50 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| B. Fitzpatrick | 96 00 | 96 00 | 96 00 | 96 00 | 96 00 | 96 00 | 96 00 | 96 00 | 96 00 | 96 00 | 96 00 |
| D. Hurgeon | ..... | ..... | ..... | ..... | 70 00 | 210 00 | 210 00 | 210 00 | 210 00 | 210 00 | 210 00 |
| P. Miller | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 87 50 | 210 00 |
| Rev. Dr. McCaul | ..... | ..... | ..... | ..... | 2,500 00 | 3,000 00 | 3,000 00 | 3,000 00 | 3,000 00 | 3,000 00 | 2,250 00 |
| H. H. Croft | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1,400 00 | 1,866 66 | 1,866 66 |
| Total | 1,240 00 | 1,240 00 | 740 00 | 180 50 | 2,666 00 | 3,300 00 | 3,306 00 | 3,306 00 | 4,706 00 | 5,260 16 | 4,632 66 |

UNIVERSITY OF TORONTO AND UNIVERSITY COLLEGE.—*Continued.*

SUMMARY OF SALARIES, PENSIONS, ETC.

| DEPARTMENT. | 1891. | 1890. | 1889. | 1988. | 1887. | 1886. | 1885. | 1884. | 1883. | 1882. | 1881. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 5. University of Toronto, General: | | | | | | | | | | | |
| Vice Chancellor | 450 00 | 400 00 | 400 00 | 400 00 | 400 00 | 400 00 | 400 00 | 400 00 | 400 00 | 400 00 | 400 00 |
| Registrar, also paid as Registrar of University College and Secretary of University College Council | 750 00 | 750 00 | 750 00 | 750 00 | 750 00 | 750 00 | 750 00 | 750 00 | 750 00 | 750 00 | 750 00 |
| Registrar's Assistant at $200 | 200 00 | 200 00 | 216 66 | 200 00 | 200 00 | 250 00 | 200 00 | 200 00 | 200 00 | 100 00 | ..... |
| Bedel and attendant on Senate, also paid as Bedel University College | 190 00 | 190 00 | 190 00 | 190 00 | 190 00 | 190 00 | 190 00 | 190 00 | 190 00 | 100 00 | 100 00 |
| Architect | 100 00 | 100 00 | 100 00 | 100 00 | 100 00 | 100 00 | 100 00 | 100 00 | 100 00 | 100 00 | 100 00 |
| Total | 1,640 00 | 4,640 00 | 1,656 66 | 1,640 00 | 1,610 00 | 1,690 00 | 1,640 00 | 1,640 00 | 1,640 00 | 1,450 00 | 1,350 00 |
| 6. University of Toronto, Teaching Staff, etc. Agriculture: | | | | | | | | | | | |
| Professor of Agriculture | ..... | ..... | ..... | ..... | ..... | ..... | 400 00 | 600 00 | 600 00 | 600 00 | 600 00 |
| Modern History: | | | | | | | | | | | |
| Professor of Modern History, formerly Professor of History and English Literature | 2,800 00 | 2,800 00 | 2,800 00 | 2,800 00 | half history 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 |
| Political Science: | | | | | | | | | | | |
| Professor in Political Science | 3,000 00 | 2,500 00 | 2,083 33 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Fellow in Political Science at $500 | 500 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Professor in Constitutional and International Law (Mills) | 1,000 00 | 1,000 00 | 500 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Professor of Roman Law, etc., etc., (Proudfoot) | 1,000 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Lecturer on Constitutional History (D. R. Keys) | ..... | ..... | ..... | ..... | ..... | ..... | 650 00 | 608 33 | ..... | ..... | ..... |
| Total | 5,500 00 | 3,500 00 | 2,583 33 | ..... | ..... | ..... | 650 00 | 608 33 | ..... | ..... | ..... |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mathematics—** | | | | | | | | | | | |
| Professor of Mathematics (A. Baker) .. | 2,500 00 | 2,500 00 | 2,500 00 | 2,500 00 | (Half Ma | thematics. | ..... | ... ..... | ..... | ..... | ..... |
| Formerly Professor of Mathematics and Natural Philosophy (J. Loudon) ..... | ..... | ..... | .... .... | ..... | 1,550 00 | 1,550 00 | 1,550 00 | 1,550 00 | 1,550 00 | 1,550 00 | 1,512 50 |
| Mathematical Tutor (Baker)..... | ..... | ..... | ..... | ..... | 1,000 00 | 1,000 00 | 1,000 00 | 1,000 00 | 1,000 00 | 1,000 00 | 1,000 00 |
| Note—From 1885-87 inclusive. | | | | | | | | | | | |
| Fellow in Mathematics ..... | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | 350 00 | 500 00 | ..... | ..... | ..... |
| Total..... | 3,000 00 | 3,000 00 | 3,000 00 | 3,000 00 | 3,050 00 | 3,050 00 | 2,900 00 | 3,050 00 | 3,050 00 | 2,550 00 | 2,512 50 |
| **Physics—** | | | | | | | | | | | |
| Professor of Physics, (formerly Mathematics and Natural Philosophy)..... | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | (Half Ma<br>1,550 00 | thematics.<br>1,550 00 | 1,550 00 | 1,550 00 | 1,550 00 | 1,550 00 | 1,512 50 |
| Temporary substitute for Prof. Loudon | ..... | ..... | ..... | ..... | 500 00 | .. .. ... | ..... | ..... | ..... | ..... | ..... |
| Demonstrator in Physics..... | 1,500 00 | 1,500 00 | 1,500 00 | 1,500 00 | 1,200 00 | 1,200 00 | 1,200 00 | 1,200 00 | 1,200 00 | 379 17 | ..... |
| Fellow in Physics ..... | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | ..... | ... .... | ..... |
| Mechanical assistance in Physics at $700 | 700 00 | 350 00 | .. .. .... | ..... | ..... | ..... | ..... | ..... | .... .... | ..... | ..... |
| Attendant on Professor of Physics, replaced by mechanical assistant..... | ..... | 210 00 | 504 00 | 504 00 | 504 00 | 504 00 | 504 00 | 504 00 | 504 00 | 467 50 | 450 00 |
| Total..... | 5,800 00 | 5,660 00 | 5,604 00 | 5,604 00 | 4,254 00 | 3,754 00 | 3,754 00 | 3,754 00 | 3,254 00 | 2,396 67 | 1,962 50 |
| **Chemistry—** | | | | | | | | | | | |
| Professor of Chemistry..... | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | 3,025 00 |
| Demonstrator in Chemistry at $800.... | 400 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Fellow in Chemistry..... ..... | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | 375 00 | ..... | ..... |
| Chemical Lecturer Assistant..... ..... | 200 00 | 200 00 | 200 00 | 200 00 | 100 00 | 100 00 | 100 00 | 100 00 | 100 00 | 100 00 | 100 00 |
| Attendant on Professor of Chemistry at $504 ..... ..... | 504 00 | 586 00 | 504 00 | 464 00 | 464 00 | 464 00 | 464 00 | 464 00 | 464 00 | 431 66 | 420 00 |
| do. do. ..... | ..... | 84 00 | ..... | ..... | ..... | ... ..... | ..... | ..... | .... .... | ..... | ..... |
| Total..... ..... | 4,704 00 | 4,470 00 | 4,304 00 | 4,264 00 | 4,164 00 | 4,164 00 | 4,164 00 | 4,164 00 | 4,039 00 | 3,631 66 | 3,545 00 |
| **Mineralogy and Geology--** | | | | | | | | | | | |
| Professor of Mineralogy and Geology.. | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | 3,025 00 |
| Fellow in Mineralogy and Geology .... | 500 00 | 312 50 | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | ..... | ..... | ..... |
| Attendant in Mineralogy and Geology at $200 ..... | 100 00 | ..... | ..... | ..... | ... .... | .... .... | ..... | ..... | ..... | .... ... | ..... |
| Total. ..... | 3,700 00 | 2,412 50 | 3,600 00 | 3,600 00 | 3,600 00 | 3,600 00 | 3,600 00 | 3,600 00 | 2,100 00 | 3,100 00 | 3,025 00 |

UNIVERSITY OF TORONTO AND UNIVERSITY COLLEGE.—*Continued.*

SUMMARY OF SALARIES, PENSIONS, ETC.

| DEPARTMENT. | 1891. | 1890. | 1889. | 1888. | 1887. | 1886. | 1885. | 1884. | 1883. | 1882. | 1881. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Biology— | | | | | | | | | | | |
| Professor of Biology, formerly Natural History and Botany | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | 3,025 00 |
| Lecturer in Physiology | 1,500 00 | 1,500 00 | 1,500 00 | 1,500 00 | .... .... | ..... | .. .... | ..... | ..... .... | ..... | .. .... |
| Lecture Assistant in Biology, etc | ..... | ..... | .. ..... | . .... | ..... | ..... | ..... | ..... | ..... .... | 75 00 | 100 00 |
| Fellow in Biology | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | ..... | ..... |
| Sub-Curator of Museum | 524 00 | 524 00 | 524 00 | 524 00 | 524 00 | 524 00 | 524 00 | 524 00 | 524 00 | 491 66 | 480 00 |
| Attendant and Caretaker of Biological Building | 480 00 | 333 34 | ..... | ... .... | ..... | ..... .... | ..... .... | ..... | ..... | ..... | ... ..... |
| Total | 6,104 00 | 5,957 34 | 5,624 00 | 5,624 00 | 4,124 00 | 4,124 00 | 4,124 00 | 4,124 00 | 4,124 00 | 3,666 66 | 3,605 00 |
| Italian and Spanish – | | | | | | | | | | | |
| Lecturer in Italian and Spanish | 1,500 00 | 1,500 00 | 1,500 00 | 1,500 00 | 1,300 00 | 1,300 00 | 1,300 00 | 775 00 | 500 00 | 500 00 | 500 00 |
| Logic, Metaphysics and Ethics— | | | | | | | | | | | |
| (*a*) Logic and Metaphysics– | | | | | | | | | | | |
| Professor of Logic and Metaphysics, Jno. Baldwin, salary from Oct., 1889, at $3,000 per annum | 3,000 00 | 2,250 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... .... | ..... | ... .... |
| Professor of Metaphysics and Ethics, G. P. Young, half | ..... .. | ..... | Half Ethics, 1,033 33 | 1,550 00 | 1,550 00 | 1,500 00 | 1,500 00 | 1,500 00 | 1,500 00 | 1,500 00 | 1,512 50 |
| Gratuity to Professor Young's representatives on his death, 6 months salary, half | ..... | ..... | Half Ethics, 775 00 | ..... | ..... | ..... | ..... .... | ..... .... | ..... | ..... | ..... |
| Temporary lectures after his death half | ..... | ..... | 175 00 | ... .... | ..... | ..... | ..... | ..... ... | ..... | ..... .... | ..... .. |
| Fellow in Logic and Metaphysics, half | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | ..... | ..... | ..... |
| Total for Logic and Metaphysics | 3,250 00 | 2,500 00 | 2,233 33 | 1,800 00 | 1,800 00 | 1,800 00 | 1,800 00 | 1,800 00 | 1,550 00 | 1,550 00 | 1,512 50 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| University College, Teaching Staff. | | | | | | | | | | | |
| (b) Ethics— | | | | | | | | | | | |
| Professor of History of Philosophy and Ethics, J. G. Hume, allowance 1890, 1891 for completion of studies as per account; full salary of $3,000 comes into force 1892 | 1,000 00 | 500 00 | | | | | | | | | |
| Professor of Metaphysics and Ethics (half) G. P. Young | | | 1,033 33 | 1,550 00 | 1,550 00 | 1,550 00 | 1,550 00 | 1,550 00 | 1,550 00 | 1,550 00 | 1,512 50 |
| Gratuity to Professor Young's representatives, half | | | 775 00 | | | | | | | | |
| Temporary Lecturer, half | | | 175 00 | | | | | | | | |
| Fellow in Logic and Metaphysics, half | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | | | |
| Total for Ethics | 1,250 00 | 750 00 | 2,233 33 | 1,800 00 | 1,800 00 | 1,800 00 | 1,800 00 | 1,800 00 | 1,550 00 | 1,550 00 | 1,512 50 |
| Add Total Logic and Metaphysics as above | 3,250 00 | 2,500 00 | 2,223 33 | 1,800 00 | 1,800 00 | 1,800 00 | 1,800 00 | 1,800 00 | 1,550 00 | 1,550 00 | 1,512 50 |
| Total for Logic, Metaphysics and Ethics | 4,500 00 | 3,250 00 | 4,466 66 | 3,600 00 | 3,600 00 | 3,600 00 | 3,600 00 | 3,600 00 | 3,100 00 | 3,100 00 | 3,025 00 |
| Greek— | | | | | | | | | | | |
| Professor of Greek, including Grecian History, formerly Prof. of Classics, half Greek | 3,100 00 | 3,100 00 | 3,100 00 | 3,100 00 | Half Greek 1,550 00 | Half Latin 1,550 00 | 1,550 00 | 1,550 00 | 1,550 00 | 1,550 00 | 1,420 85 |
| Professor of Classical Literature, Dr. McCaul, half Greek, three months salary | | | | | | | | | | | 350 00 |
| Classical Tutor, half Greek | | | | | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 |
| Lecturer in Greek | 1,500 00 | 1,500 00 | 1,500 00 | 1,500 00 | | | | | | | |
| Fellow in Classics, half Greek | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | | | |
| Total for Greek | 4,850 00 | 4,850 00 | 4,850 00 | 4,850 00 | 2,300 00 | 2,300 00 | 2,300 00 | 2,300 00 | 2,050 00 | 2,050 00 | 2,270 85 |
| Latin— | | | | | | | | | | | |
| Professor of Classics, half Latin | | | | | 1,550 00 | 1,550 00 | 1,550 00 | 1,550 00 | 1,550 00 | 1,550 00 | 1,420 85 |
| Professor of Classical Literature, half Latin | | | | | | | | | | | 350 00 |
| Classical Tutor, half Latin | | | | | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 |
| (Note.—From 1881 to 1885 was Classical Tutor and Dean at total salary of $1,746.67; assumed $1,000 attached to Lectureship.) | | | | | | | | | | | |
| Lecturer in Latin, including Roman History | 1,500 00 | 1,500 00 | 1,500 00 | 1,500 00 | | | | | | | |
| Fellow in Classics, half Latin | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | | | |
| Total for Latin | 1,750 00 | 1,750 00 | 1,750 00 | 1,750 00 | 2,300 00 | 2,300 00 | 2,300 00 | 2,300 00 | 2,050 00 | 2,050 00 | 2,270 85 |

UNIVERSITY OF TORONTO AND UNIVERSITY COLLEGE.—*Continued.*

SUMMARY OF SALARIES, PENSIONS, ETC.

| DEPARTMENT. | 1891. | 1890. | 1889. | 1888. | 1887. | 1886. | 1885. | 1884. | 1883. | 1882. | 1881. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ . | $ c. | $ c. | $ c. | $ c. | $ c. |
| Oriental Literature— | | | | | | | | | | | |
| Professor in Oriental Literature—Dr. McCurdy formerly lecturer | 2,000 00 | 2,000 00 | 1,833 34 | 1,500 00 | 1,375 00 | 500 00 | ..... | ..... | ..... | ..... ..... | ..... ... |
| Lecturer in Oriental Literature—John Hirschfelder | ..... ..... | ..... | 750 00 | 1,500 00 | 1,500 00 | 1,500 00 | 1,500 00 | 1,500 00 | 1,500 00 | 1,500 00 | 1,500 00 |
| Total | 2,000 00 | 2,000 00 | 2,583 34 | 3,000 00 | 2,875 00 | 2,000 00 | 1,500 00 | 1,500 00 | 1,500 00 | 1,500 00 | 1,500 00 |
| English— | | | | | | | | | | | |
| Professor in English (W. J. Alexander) Salary from September, '89, at $3,000 | 3,000 00 | 2,500 00 | ..... | ..... | .. . ..... | .... ... | ..... | ..... | . ..... | ..... ..... | ..... |
| Professor of History and English Literature, half English | ..... | ..... | ..... | ..... | Half English, Liter. 1,400 00 | 1, ' 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 |
| Lecturer in English | 1,500 00 | 1,500 00 | 1,500 00 | 1,500 00 | ..... | ... ..... | ..... | ..... | ..... | ..... | ..... |
| Total for English | 4,500 00 | 4,000 00 | 1,500 00 | 1,500 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 | 1,400 00 |
| French— | | | | | | | | | | | |
| Lecturer in French. Change of Lecturer in '84, part of year's salary not paid | 1,500 00 | 1,500 00 | 1,500 00 | 1,500 00 | 1,000 00 | 1,000 00 | 1,000 00 | 700 00 | 1,150 00 | 1,000 00 | 1,000 00 |
| Fellow in Modern Languages, half French | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | ..... | ..... | ..... |
| Second Fellow in Modern Languages at $500, half French | 125 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... ... | ..... | ..... |
| Total for French | 1,875 00 | 1,750 00 | 1,750 00 | 1,750 00 | 1,250 00 | 1,250 00 | 1,250 00 | 950 00 | 1,150 00 | 1,000 00 | 1,000 00 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| German— | | | | | | | | | | | | |
| Lecturer in German, also paid as Librarian | 1,000 00 | 1,000 00 | 1,000 00 | 1 000 00 | 1,000 00 | 1,000 00 | 1,000 00 | 1,000 00 | 1,000 00 | 937 48 | 750 00 | 750 00 |
| Fellow in Modern Languages, half German | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | 250 00 | ..... | ..... | ..... |
| Second Fellow in Modern Languages, half German | 125 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Total for German | 1,375 00 | 1,250 00 | 1,250 00 | 1,250 00 | 1,250 00 | 1,250 00 | 1,250 00 | 1,250 00 | 1,250 00 | 937 48 | 750 00 | 750 00 |
| 8. University College, General— | | | | | | | | | | | | |
| Registrar University College and Secretary to College Council; also paid as Registrar to University | 250 00 | 250 00 | 250 00 | 250 00 | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | 500 00 | 475 00 |
| Bedel, also paid as Bedel to University | 510 00 | 510 00 | 510 00 | 510 00 | 510 00 | 510 00 | 510 00 | 510 00 | 510 00 | 510 00 | 510 00 | 510 00 |
| Total | 760 00 | 760 00 | 760 00 | 760 00 | 1,010 00 | 1,010 00 | 1,010 00 | 1,010 00 | 1,010 00 | 1,010 00 | 1,010 00 | 985 00 |

A. Modern Languages.

The evidence submitted on Modern Languages comprising French, German, Spanish, and Italian, is as follows :—

1. June 6th, 1890.

Memorial of Messrs. vanderSmissen, Squair, and Fraser, lecturers in Modern Languages, representing that they are unable to overtake, without further assistance, the amount of work entailed by the large and rapidly increasing number of students in their departments, and by the increased requirements of the curriculum ; that the lecturers find it impossible to increase the number of lectures given by themselves, and that the assistance rendered by the Fellow in Modern Languages, which is four hours weekly in each of the subjects of French and German, is all that can fairly be demanded of him ; that no assistance has been given in Italian and Spanish, in which help is urgently required ; and requesting that as a temporary measure of relief two fellows be appointed in modern languages for the then approaching academic year.

2. 6th August, 1890.

The memorial of the same gentlemen to the same effect, repeating their request for an opportunity of laying detailed information before the Senate.

3. 16th October, 1890.

The memorial of the same gentlemen and of Mr. Dale, lecturer in Latin, stating that these departments constitute a very large and important part of the arts course of the University, in point both of numbers of students and of difficulty of courses of study ; and stating the importance of the representation of the departments in the Councils of the University of Toronto, and of University College, in which they are not represented, and praying the Senate to devise means for remedying the evil.

3. (*a*)—A memorandum of facts and considerations in support of the said memorial as follows :—

Memorial.

*To the Chancellor, Vice-Chancellor and Members of the Senate of the University of Toronto :*

The undersigned lecturers in University College and the University of Toronto, in the departments respectively of Latin, French, German, Italian and Spanish, beg respectfully to bring to the attention of your honourable body the following statements :—

1. That the departments named above constitute a very large and important part of the arts course of the University, whether account be taken of the numbers of students in these departments or of the difficulty of the courses prescribed in them.

2. That the undersigned have sole charge of these departments, and are as entirely responsible for the teaching done in them and for their proper and efficient administration as the professors in charge of other departments.

3. That in the Councils of University College and the University of Toronto questions of University administration and policy, directly and indirectly affecting the interests of lecturers and students in these departments, are discussed and disposed of, and that in these Councils the aforesaid departments are without voice or representation.

In view of the above, the senate is respectfully requested to take the whole matter into its consideration, with the object of devising such measures as will without delay remedy a condition of things prejudicial, not only to the aforesaid departments, but also to the interests of the University in general.

(Signed) W. Dale.
J. Squair.
W. H. VanderSmissen
W. H. Fraser.

University of Toronto, 16th October, 1890.

*Memorandum of facts and considerations in support of the above.*

1. "The departments named constitute a very large and important part of the Arts course, etc."

*(a)* The *number of students* in the various departments of the arts course is as follows :—

On the Basis of Pass Students.

| Year. | Greek. | Latin. | Math. | Physics. | Ethnol. | Eng. | French. | Ger. | Ital. | Span. | Chem. | Biol. | Min. | Geol. | Philos. | Logic. | Orientals. | Pol. Sc. | Hist. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fourth | 13 | 13 | 2 | 13 | .. | 13 | .. | .... | .. | .. | .. | .. | .. | .. | .. | 23 | .. | .. | .... |
| Third | 6 | 18 | .... | 6 | .. | 21 | 7 | 15 | .. | .. | .. | .. | .. | .. | 14 | .. | 1 | .. | 30 |
| Second | 18 | 106 | 82 | 82 | .. | .... | 63 | 74 | .. | .. | .. | .. | .. | .. | 7 | 87 | 12 | .. | 34 |
| First | 26 | 93 | 118 | .... | .. | 70 | 50 | 54 | .. | .. | 21 | 31 | .. | 86 | .. | .... | 17 | .. | 85 |
| Total | 63 | 230 | 102 | 101 | .. | 104 | 120 | 143 | .. | .. | 21 | 31 | .. | 86 | 21 | 110 | 30 | .. | 149 |

On the Basis of Honor Students.

| Year. | Greek. | Latin. | Math. | Physics. | Ethnol. | Eng. | French. | Ger. | Ital. | Span. | Chem. | Biol. | Min. | Philos. | Logic. | Orientals. | Pol. Sc. | Hist. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fourth | 11 | 11 | 3 | 5 | 4 | 22 | 15 | 15 | 15 | 15 | 4 | 7 | 3 | 14 | 19 | 2 | 15 | .. |
| Third | 15 | 15 | .. | 11 | .. | 31 | 20 | 19 | 19 | 19 | 5 | 5 | 5 | 14 | 14 | 2 | 18 | 33 |
| Second | 20 | 20 | 18 | 18 | .. | 49 | 30 | 28 | 27 | .. | 23 | 23 | 23 | 17 | 21 | 2 | 37 | 48 |
| First | 15 | 17 | 8 | .. | .. | 53 | 38 | 36 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Total | 61 | 63 | 29 | 34 | 4 | 155 | 103 | 98 | 61 | 34 | 32 | 35 | 31 | 45 | 54 | 6 | 70 | 81 |

Note.—The statistics given are taken from the registrar's records for the session 1889-90, and are approximately correct for the current year, except in Italian and Spanish, in which subjects (owing to a change in the curriculum) the numbers are at present respectively 90 and 61.

*(b)* As regards "the difficulty of the courses of study prescribed in them."

This is shown by reference to the curriculum. It is assumed in this connection that honor departments are intended by the Senate to be equivalent to one another.

*(c)* Moreover, the departments named are *fundamental* as regards the arts course and as regards the training of teachers for the high schools. All students of the arts course are required to take Latin, and in most honor departments a knowledge of French and German is demanded. Latin and the modern languages form a very large part of the work of the secondary schools.

2. "The undersigned have sole charge of these departments, etc."

This is shown by reference to the University and College calendars. The undersigned prescribe the subjects on which lectures are given, deliver courses of lectures, superintend the work of the Fellows attached to the respective departments, and are practically responsible in every respect as regards the standard of efficiency in their departments and the discipline of students, subject only, like professors, to the general supervision of the President.

3. "The undersigned are without voice or representation on the Councils of University College and the University of Toronto."

It might perhaps be asserted that Latin is represented under the head of Classics by the professor of Greek. The two subjects are, however, entirely distinct. The professor of Greek has no control or supervision in any way over the work in Latin. He is not supposed to know the circumstances of the Latin department, and does not assume to represent it. The two departments are as distinct as, *e.g.*, those of Mathematics and Physics, each of which is represented by its own professor.

Or it might be asserted that French, German, Italian and Spanish are represented by the professor of English (one of the subjects of the Modern Language group). But the professor of English, similarly, does not assume any knowledge of, or control over, or responsibility for the work in French, German, Italian and Spanish. These departments are as distinct as, *e.g.*, those of Biology, Chemistry and Mineralogy and Geology of the Natural Science group, each of which is represented by its own professor.

It might be asserted further that, as a matter of fact, the lecturers named are consulted as to the administration of their departments. This, in any case, is a matter of courtesy and not of right, and cannot be construed as representation.

4. The Senate is requested to "devise measures to remedy a condition of things prejudicial to the aforesaid departments, and also to the interests of the University in general."

The memorialists assume that representation of the various departments on the councils is useful and desirable, as regards the just and efficient administration of the various departments and of the University in general. Hence, the want of representation is considered to be prejudicial. Specific instances are not necessary to establish this position. If desired, however, instances can be given in which the memorialists consider that the want of representation has proved to be prejudicial to the interests of their departments and of the University.

In general, owing to want of representation and the status implied by representation under existing conditions, these departments occupy, in comparison with other departments, an inferior and anomalous position.

Moreover, the feeling of injustice inseparably associated with existing conditions is calculated to disturb that harmony which is necessary to the satisfactory administration of the business of the University. In addition to what is implied in the various statements of the memorial, the reasonableness of the claim for representation is supported by the following considerations:—

(*a*) Representation of the various branches of learning is evidently a recognized principle in the organization of the Councils, even when representation is not further warranted by the numerical importance of departments in respect of students.

Thus, in the Council of University College, Greek, Oriental languages and English are represented by their respective professors, while Ethics, during the temporary absence of the professor of ethics, is represented by the acting professor in that subject. It is claimed by the memorialists that no reason can be urged for the representation of Greek on this Council, which does not apply with equal force to the representation of Latin, similarly it is claimed that no reason can be urged for the representation of Oriental languages, English and Ethics, which does not apply with, at least, equal force to the representation of French and German. Besides, it appears from the University Act (50 Vict., cap. 43, sec. 77) that representation of Latin ; French and German was contemplated, for the Act expressly prescribes (50 Vict., cap. 43, sec. 77) that each of the branches named shall be taught by a professor, lecturer and fellow.

In the University Council the following subjects of the arts course are represented : History and Ethnology, Physics, Mathematics, Mineralogy and Geology, Biology, Chemistry, Political science, Metaphysics (same professor also representing Ethics temporarily on the College Council), and Comparative philology (the professor in the last named subject also representing Greek on the College Council).

It is urged that the department of Italian and Spanish, which constitutes, at least, one-half of the University work in the Romance languages, has equal claims to representation with Chemistry, Mineralogy and Geology, History and Metaphysics, etc., which similarly constitute on the curriculum a *part* of the prescribed work in Natural Science and in the other departments to which they respectively belong. On the other hand, the subject of Comparative philology is accorded representation, although it does not as yet form a recognized portion of the arts curriculum, and although it is defined in the University Act (50 Vict., cap. 43, sec. 5) as not forming a department by itself, but only in connection with Ethnology.

(*b*) So fully does the principle of representation appear to be carried out, that Latin, French, German, Italian and Spanish are the only departments unrepresented, while certain courses in law, under the charge of occasional professors, have full representation on the University Council.

Hence, the position of the memorialists is that they demand for their departments that representation, which, as it appears, has been granted to all other departments. They urge that their departments be organized in accordance with the requirements of the University Act. Nor can any objection reasonably be alleged on account of insufficient funds, seeing that in other departments representation has been granted irrespective of the question of salary in any given case.

4. The report of the committee of the Senate appointed to deal with (among other matters) the above, recommending, among other things, as urgent, the appointment of a second Fellow in Modern Languages; and appending statistics showing, in French (students), honors, 99 ; pass, 165, (including first year, 98 ;) total 264. Lectures 18, including (first year) 2 elementary pass, 1 advanced pass, 1 honor. In German (students), honor, 99 ; pass, 166 (including first year, 93 ;) total 265. In Italian and Spanish (students), Italian, 90 ; Spanish, 61 ; total, 151 ; lectures, 14 ; averaging two per week to each class of students.

5. 24th October, 1890.—The report of the Board of arts studies on the memorials of the lecturers in Modern Languages and the professor of Physics to the effect that the appointment of an additional Fellow in Modern Languages is urgently required.

6. January 1st, 1891.—Letter from Mr. Squair to the Registrar communicating the resolution of the Modern Language Association, No. 1, as follows :—

(1) " In view of the importance of the modern languages, both as to their intrinsic value and as to their bearing upon other subjects of study as prescribed in the curriculum of the provincial University, and in view also of the increasing attention given to these subjects in the high schools of Ontario, this Association expresses the opinion that those who may have charge of the different branches of the department of Modern Languages in the University of Toronto and in University College should be accorded a status equal to that held by the professors of the other departments.

(2) " That, in view of the importance of the study of English, French and German, this Association do request the Senate of the University of Toronto to make such changes in the regulations governing the Prince of Wales' Scholarship of the Junior matriculation as will recognize the equality of Classics, Mathematics and Modern Languages in the awarding of the said Scholarship."

7. January 10th, 1891.

The memorial of Messrs. VanderSmissen, Squair and Dale, lecturers, to the Senate as follows :—

*To the Chancellor, Vice-Chancellor and Members of the Senate of the University of Toronto:—*

A memorial from the lecturers in French, German, Italian, and Spanish was presented to the Senate in the month of June last, setting forth the fact that the lecturers were unable to overtake, without further assistance, the amount of work entailed by the large and rapidly increasing numbers of students in those departments, and by the increased requirements of the curriculum; and suggesting that as a temporary measure of relief two Fellows be appointed instead of one.

The memorial referred to was drawn up on the understanding that the embarrassed condition of the University funds rendered anything more than a temporary measure of relief at the time impracticable.

The lecturers subsequently appeared in support of the memorial before a committee of the Senate appointed to deal with the matter. On conferring with the committee, the memorialists, were reminded that in view of the condition of the funds, any discussion of the ultimate requirements of the departments in question as well as of all other departments would be premature.

Since the conference referred to, however, a proposition involving the expenditure of a considerable sum for the erection and maintenance of chemical and mineralogical laboratories has been considered by the Senate and referred to a committee.

In view of the contemplated expenditure involved in carrying out this proposition, the undersigned lecturers in Latin, French and German consider it their duty to lay before the Senate the statistical statement subjoined, prepared from the University class lists, showing the numbers of students in the departments named, as well as in other departments, for the years 1880 to 1890 inclusive :—

Pass Students.

| | 1880. | 1881. | 1882. | 1883. | 1884. | 1885. | 1886. | 1887. | 1888. | 1889. | 1890. | Increase or Decrease. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Greek | 132 | 140 | 112 | 105 | 124 | 126 | 88 | 120 | 119 | 116 | 86 | 46 dec. |
| Latin | 161 | 167 | 141 | 146 | 166 | 177 | 155 | 189 | 183 | 258 | 293 | 132 inc. |
| Mathematics | 146 | 145 | 156 | 144 | 163 | 150 | 173 | 118 | 126 | 152 | 152 | 135 inc. |
| Physics | ..... | ..... | ..... | 5 | 14 | 20 | 34 | 109 | 135 | 106 | 129 | |
| English | 93 | 93 | 90 | 93 | 94 | 91 | 122 | 127 | 150 | 152 | 171 | 78 inc. |
| French | 57 | 66 | 41 | 51 | 50 | 54 | 62 | 98 | 106 | 135 | 170 | 113 inc. |
| German | 13 | 8 | 9 | 16 | 10 | 10 | 18 | 55 | 61 | 137 | 175 | 162 inc. |
| Chemistry | 58 | 26 | 42 | 30 | 31 | 26 | 48 | 48 | 47 | 54 | 57 | 1 dec. |
| Biology | 5 | 6 | 10 | 5 | 5 | 2 | 23 | 32 | 32 | 34 | 25 | 20 inc. |
| Mineralogy and Geology | 7 | 18 | 27 | 32 | 41 | 42 | 62 | 93 | 79 | 75 | 86 | 79 inc. |
| Philosophy | 27 | 24 | 24 | 22 | 25 | 24 | 29 | 39 | 27 | 37 | 24 | 3 dec. |
| Logic | 64 | 38 | 42 | 46 | 60 | 44 | 58 | 55 | 59 | 92 | 120 | 56 inc. |
| Orientals | 11 | 13 | 14 | 17 | 18 | 28 | 31 | 29 | 39 | 30 | 28 | 17 inc. |
| History | 54 | 52 | 46 | 33 | 42 | 43 | 49 | 54 | 57 | 165 | 191 | 137 inc. |
| Civil Polity | 48 | 43 | 60 | 34 | 53 | 55 | 33 | 38 | 47 | 51 | 53 | 5 inc. |

Honor Students.

| | 1880. | 1881. | 1882. | 1883. | 1884. | 1885. | 1886. | 1887. | 1888. | 1889. | 1890. | Increase or Decrease. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Greek | 44 | 41 | 46 | 46 | 45 | 50 | 48 | 54 | 71 | 66 | 63 | 19 inc. |
| Latin | 44 | 44 | 46 | 47 | 45 | 52 | 48 | 54 | 71 | 66 | 64 | 20 inc. |
| Mathematics | 37 | 34 | 45 | 42 | 43 | 28 | 24 | 30 | 33 | 27 | 32 | 11 inc. |
| Physics | ..... | ..... | ..... | 17 | 5 | 15 | 19 | 14 | 12 | 13 | 16 | |
| Ethnology | 6 | 14 | 5 | 13 | 5 | 15 | 7 | 6 | 14 | 10 | 3 | 3 dec. |
| English | 43 | 44 | 59 | 58 | 59 | 69 | 66 | 85 | 91 | 94 | 116 | 73 inc. |
| French | 35 | 33 | 52 | 55 | 54 | 64 | 57 | 73 | 79 | 82 | 91 | 56 inc. |
| German | 27 | 30 | 46 | 52 | 50 | 60 | 54 | 67 | 74 | 80 | 94 | 67 inc. |
| Italian | 9 | 10 | 22 | 18 | 19 | 20 | 35 | 44 | 48 | 40 | 47 | 38 inc. |
| Spanish | ..... | ..... | ..... | ..... | ..... | ..... | 7 | 18 | 21 | 17 | 27 | |
| Chemistry | 21 | 18 | 16 | 16 | 22 | 17 | 20 | 19 | 18 | 22 | 31 | 10 inc. |
| Biology | 21 | 18 | 17 | 17 | 22 | 17 | 22 | 20 | 19 | 25 | 28 | 7 inc. |
| Mineralogy and Geology | 21 | 18 | 16 | 16 | 22 | 17 | 19 | 16 | 16 | 21 | 27 | 6 inc. |
| Philosophy | 59 | 75 | 65 | 71 | 72 | 84 | 68 | 78 | 72 | 60 | 33 | 26 dec. |
| Logic | 39 | 52 | 49 | 50 | 47 | 65 | 34 | 65 | 48 | 44 | 20 | 19 dec. |
| Orientals | 8 | 8 | 11 | 6 | 10 | 9 | 10 | 1 | 2 | 7 | 5 | 3 dec. |
| Political Science | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 55 | 64 | |
| History | 16 | 32 | 27 | 21 | 29 | 25 | 32 | 56 | 54 | 55 | 60 | 44 inc. |
| Civil Polity | 34 | 44 | 47 | 46 | 47 | 41 | 55 | 49 | 51 | 44 | 21 | 13 dec. |

The attention of the Senate is directed to the following comparisons based on the above statistics : —

The number of students in Latin, in which there is one lecturer who is assisted by half the services of the Classical Fellow, is 357 (64 honors plus 293 pass), as compared with a total in Greek of 149 (63 honors plus 86 pass), in which department there are one professor and one lecturer assisted by half the services of the Classical Fellow. As compared with other departments, the number in honor Latin (64) is considerably larger than that in honor Mathematics and Physics (48), in which there are two professors, two lecturers and two Fellows, somewhat larger than that in honor Chemistry and Biology combined (59), in which there are two professors, one lecturer and two Fellows ; while the number in Pass Latin (293) is considerably larger than in any other department of the University.

In honor French there are ninety-one students, and in honor German ninety-four, numbers far surpassing those in any other honor department, except that of English (116). The numbers in honor French and German, in each of which there is but one ecturer assisted by half the services of a Fellow, are one and a half times greater than those in honor Greek, nearly twice as large as those in honor Mathematics and Physics, nearly three times as large as those in honor Metaphysics, in which there will be, after October

next, two professors and a Fellow, and larger than the numbers in honor Chemistry, Biology and Mineralogy combined, in which there are three professors, one lecturer, three Fellows, and other assistants.

The number of students in pass French is 170, and in pass German 175, numbers much larger than those in any other pass subject except pass Latin, pass History and pass English. Of these, moreover, a considerable number are elementary students, for whom special teaching provision is indispensable.

It is apparent from the above that the provision made for the teaching of Latin, French and German, whether considered absolutely or in comparison with the equipment of other departments, is at present inadequate. Moreover, in view of prospective needs, the attention of the Senate is directed to the following comparative statement of the increase or decrease which has respectively taken place in various departments in the period covered by the statistics.

The increase in honor Latin has been from 44 in 1880, to 64 in 1890; in pass Latin from 161 to 293; as compared with a decrease in pass Greek from 132 to 86. In honor French, the increase has been from 35 to 91: in honor German, from 27 to 94; in pass French, the increase has been from 57 to 170, and in pass German, from 13 to 175. In other honor departments the increase has been much smaller, as for example, in honor Mathematics and Physics, an increase from 37 to 48; in honor Chemistry, from 21 to 31; in Biology, from 21 to 38, and so on; while in honor Philosophy there has been a decrease from 59 to 38.

The attention of the Senate is also directed to the fact that certain changes in the curriculum will add considerably to the numbers in pass French and German, to such an extent that within two years there will probably be 250 students in each of these pass subjects.

The large amount of work in connection with so many students of such a variety of attainment has already made it necessary to increase the number of lectures per week in French and German to about twenty in each, a number exceeding, it is believed, those given to any other department.

The undersigned desire by the above statements and comparisons to direct the attention of the Senate to the present and prospective needs of the departments under their care. They desire also to protest respectfully against the expenditure of large sums of money in the equipment of other departments, without full consideration of the requirements of the departments of Latin, French and German, which, owing to their numerical strength and fundamental importance, both in the University and in the school system of the Province, have in the opinion of the undersigned a primary claim upon the resources of the University.

(Sgd.) W. H. Vander Smissen,
*Lecturer in German.*

University of Toronto,
January 10th, 1891.

J. Squair,
*Lecturer in French.*

William Dale, M.A.,
*Lecturer in Latin.*

8. The report of the committee as amended by the Senate, expressing the opinion that English, French, German, Italian, and Spanish should be represented in the Councils, and that steps should be taken by amendatory legislation for the appointment of professors or otherwise to that end.

9th May, 1890.

The report of the Board of examiners to the Senate, as follows :—

The Board of examiners desire respectfully to call the attention of the Senate of the University to the very unsatisfactory nature of the work done by pass candidates in arts at the examinations just concluded. The defective character of the work is especially marked in the first and second years, and is partially shown by the following tabular statement of some of the results :—

| Subjects of Examination. | Total number of candidates. | Number who failed. | Average per cent. of marks obtained by those who failed. |
|---|---|---|---|
| 1st year Mathematics | 165 | 33 | 18 |
| 2nd " " | 95 | 41 | 23 |
| 1st " Classics | 173 | 53 | 21.5 |
| 2nd " " | 112 | 36 | 22 |
| 1st " French | 79 | 35 | 17 |
| 2nd " French | 77 | 41 | 17.6 |
| 1st " German | 79 | 20 | 21.8 |
| 1st " English | 142 | 47 | 26 |
| 2nd " Philosophy | 134 | 42 | 21 |

The Board attributes the unsatisfactory condition of things here exhibited to the growing neglect of pass subjects by candidates, and to a lack of sufficient supervision and direction arising from the inability of the teaching staff to cope with the rapidly increasing numbers of students in classes of the lower years. It is therefore respectfully suggested that the Senate should take this matter into consideration, and should devise some means of improving the pass course, especially in the first and second years.

## B. French.

Mr. Squair, by paper of 27th January 1891, gives the following tables and memoranda :

Number of Students in attendance at present.

| | Taking Honor Work. | | Taking Pass Work. | |
|---|---|---|---|---|
| | According to Class Roll. | According to Registrar. | According to Class Roll. | According to Registrar. |
| 4th year | 16 | 17 | 16 plus 8— 24 | 17 plus 12— 29 |
| 3rd year | 20 | 23 | 20 " 13— 33 | 23 " 20— 43 |
| 2nd year | 42 | 41 | 42 " 63—105 | 41 " 99—140 |
| 1st year | 36 | 39 | 36 " 108—144 | 39 " 100—139 |
| Total | 114 | 120 | 114 plus 192—306 | 120 plus 231—351 |

Note.—All honor students take the pass work of their respective years.

Number of Lectures per week given at present.

| | Pass Work. | Honor Work. | | | |
|---|---|---|---|---|---|
| | Reading texts, Prose exercises, Dictation, etc. | Conversation and Composition. | Literature (Reading texts, etc.) | Philology (Reading old French texts, History of language, etc.) | Total. |
| 4th year | 1 (24 in class) | 16 Students. 2 (8 in class). | 1 (16 in class).. | 1 (16 in class).. | 5 |
| 3rd year | 1 (33 in class) | 20 Students. 2 (10 in class) | 1 (20 in class).. | 1 (20 in class).. | 5 |
| 2nd year | 105 Students. 2 (63 pass men in class). 1 (42 honor men in class) | ..... | 1 (42 in class).. | ..... | 4 |
| 1st year | 144 Students. 3 (60 beginners in class.) 1 (84 honor men and pass men in class) | ..... | 1 (36 in class).. | ..... | 5 |
| Total | 9 | 4 | 4 | 2 | 19 |

Of these the lecturer takes 15 and the Fellow 4.

To these should be added supplementary lectures and hours for correcting prose with individual students, making on an average about five hours per week.

It will easily be seen that the amount of instruction given is in several items inadequate, particularly in the first and second years. To remedy this the scheme of classes below is recommended.

Number of Lectures per week necessary for present numbers.

| | Pass Work. | Honor Work. | | | |
|---|---|---|---|---|---|
| | Reading texts, Prose exercises, Dictation, etc. | Conversation and Composition. | Literature (reading texts, etc.) | Philology (reading old French texts, history of language, etc. | Total. |
| Fourth Year | 2 (24 in class) | 16 students. 2 (8 in class) .. | 2 (16 in class)... | 1 (16 in class)... | 7 |
| Third " | 2 (33 in class) | 20 students. 3 (7 in class) .. | 1 (20 in class)... | 1 (20 in class). . | 7 |
| Second " | 105 students. 2 (31 pass men in class). 2 (31 pass men in class). 1 (63 pass men in class). 1 (42 honor men in class | ..... | 42 students. 2 (21 in class)... 2 (21 in class)... | ..... | 10 |
| First " | 144 students. 2 (30 beginners in class) 2 (30 beginners in class) 1 (60 beginners in class) 1 (42 honor and pass men in class) . ..... 1 (42 honor and pass men in class)..... | ..... ..... | 2 (36 in class)... | ..... | 9 |
| Total | 17 | 5 | 9 | 2 | 33 |

In both tables the numbers on the class rolls have been considered. To these (33 hours per week) would be added a certain number of supplementary lectures and hours for the correction of prose, making an average of say seven hours per week.

To do this work the present staff must at least be doubled, *i.e.*, instead of one lecturer and half the services of a Fellow, there must be at least two fully qualified instructors and a full Fellow. With such a staff it would be possible to record attendance and progress in all the classes, until the number of students should be increased by about 25 per cent., after which additional assistance would be necessary.

---

C. German.

Mr. vanderSmissen, by letter of January 31st, 1891, gives the following statements and tables:

I beg to submit herewith for the information of the committee on the needs of the University and University College, a statement of the urgent requirements of the department of German.

In doing this, I beg to call your attention to the fact that this department is now under the charge of a lecturer, to whom are also assigned the duties, peculiarly onerous since the fire, of University librarian, and who is assisted by a Fellow, part of whose services are required for another department. I submit that this arrangement is profitable neither to the interests of the library, nor to those of the department of German, and that I ought to be placed in a position, without diminution of my present very inadequate salary, to devote myself exclusively to the latter as soon as possible.

I have asked for three fully qualified instructors, meaning thereby such instructors as are fit for the rank of lecturer. My reason for this is that, owing to the frequent changes in the fellowships, which cannot, according to the statute, be held by the same person for more than three successive years, one year in every three is all but lost, since, in the most favorable case, a new and inexperienced man has to be put in charge of certain classes once every three years. In my opinion, the only proper use of fellowships is to encourage post-graduate study, and the Fellow should not be hampered in this by such onerous duties as must at present be assigned to him If, however, the funds of the University do not allow of such a staff, two instructors of the capacity I speak of, with a fellow as hitherto employed, might possibly be made to do the necessary work.

The figures giving the number of students at present in attendance are taken from the official registration returns in Mr. Langton's office.

1. Present attendance.

| Year. | Taking honor work only | Taking pass work only. | Taking honor and pass work. |
|---|---|---|---|
| 4th | 17 | 7 | 24 |
| 3rd | 22 | 18 | 40 |
| 2nd | 42 | 91 | 133 |
| 1st | 35 | 110 | 145 |
| Totals | 116 | 226 | 342 |

2. Lectures now given per week.

| Year. | Texts. | Pass work. Grammar, etc. | Texts. | Honor work. Composition, etc. | Philology. |
|---|---|---|---|---|---|
| 4th } | 1 | 2 { | 1 } | 2 { | 1 |
| 3rd } | | | 2 } | | 1 |
| 2nd | 1 | 2 | 1 | .. | .. |
| 1st | 1 | 2 | 1 | .. | .. |

Making a total of 19 lectures.

Notes.—(*a*) The lectures on the 3rd and 4th year texts are given in alternative weeks.

(*b*) To these hours should be added 10—12 hours per week of instruction in prose composition to smaller groups of students.

3. Number of lectures required for present numbers.

| Year. | Pass work. Texts. | Pass work. Grammar, etc. | Literature. | Honor work, Composition etc. | Philology. |
|---|---|---|---|---|---|
| 4th | 1 | 1 | 2 | 2 | 1 |
| 3rd | 1 | 1 | 2 | 3 | 1 |
| 2nd | | 4 | 1 | 3 | .. |
| 1st | | 5 | 1 | 3 | .. |

NOTES.—(*a*) The four lectures for the 2nd year, and five for the 1st year in grammar, composition, dictation and sight translation, are required for the proper sub-division of the large classes in those years into classes not exceeding thirty. Of the five in the 1st year, two or three would be for elementary work, suitable for beginners.

(*b*) More lectures will be required as soon as the attendance shall have increased by (say) twenty-five per cent.

(*c*) Additional hours will be necessary as soon as the German seminary shall have been properly equipped, and about fifteen hours per week will be necessary for correction of prose as above.

In order to satisfy the above requirements there should be a staff of three fully qualified instructors, by which is meant such as are fit for the rank of lecturer at the least.

---

D. SPANISH AND ITALIAN.

Mr. Fraser by letter of 26th January, 1891, gives the following tables and statements :

Statement of requirements for the teaching of Italian and Spanish in the University of Toronto.

Italian.

| Year. | Number of students in class. | Number of lectures per week. | Subject of lecture. | Additional duties. |
|---|---|---|---|---|
| 1st | 31 | 3 *i. e.* | 2 Grammar and texts.<br>1 Elements of Phonetics. | A considerable amount of time is required for the correction of composition exercises and essays outside of class hours. |
| 2nd | 37 | 3 *i. e.* | 1 Composition and Grammar.<br>2 Texts | |
| 3rd | 21 | 3 *i. e.* | 1 Composition.<br>2 Texts, History of Literature and Philology. | |
| 4th | 14 | 5 *i. e.* | 1 Composition.<br>3 Texts, History of Literature and Conversation.<br>1 Philology and old Italian texts. | |

The total number of lectures per week 14.

Spanish.

| Year. | Number of students in class. | Number of lectures per week. | Subject of lecture. | Additional duties. |
|---|---|---|---|---|
| 2nd | 37 | 3 | Grammar and texts. | As in Italian. See above. |
| 3rd | 21 | 3 *i. e.* | 1 Composition and Grammar.<br>2 Texts, History of Literature and Philology. | |
| 4th | 15 | 4 *i. e.* | 1 Composition.<br>2 Texts, History of Literature.<br>1 Philology and old Spanish texts. | |

Total number of lectures per week 10.

The estimate of the number of lectures per week (24 in all) is based on the requirements of the new curriculum (1891-5), which embraces extensive changes in the courses in Italian and Spanish, and which comes fully into force in these subjects at the beginning of the session 1892-3. The number of lectures required per week next session (1891-2), of which the work is mainly on the new curriculum, will be 21. The number of lectures given at present is 15 per week.

The staff consists at present of one lecturer, with the prospective addition of one-third of the services of the two Modern Language Fellows. In order to overtake the work in 1891-2 and afterwards, the present staff (one lecturer) will require to be increased by the addition of a Fellow whose whole time will be given to Italian and Spanish. Any considerable increase, say 25 to 35 per cent., will render subdivision of the classes in the lower years necessary, and additional provision for teaching will then be required.

The lectures in Italian and Spanish (as University subjects) are open to students of affiliated colleges, and hence the number of students in Victoria College pursuing a Modern Language course will have to be taken into account upon the removal of that institution to Toronto.

## E.—Latin.

Mr. Dale with reference to the memorial A 7 asks the attention of the Committee to the following statements :—

1. Latin, French and German (with English and Mathematics) form the foundation of the higher and Collegiate education of the Province.

2. From figures for the present session supplied by the Registrar he finds the following facts :—

(*a*) Latin, French and German, with a staff of three lecturers and one and a half Fellows have 1,028 pass and 319 honor.—*1,347 attendances.*

(*b*) Greek, English and Hebrew, the other three departments in University College, with a staff of three professors, two lecturers and half the services of a Fellow have but 725 Pass and 283 Honor—*1,008 attendances.*

(*c*) The subjects included in the Faculty of arts in the University, with a staff of eight or nine professors, three lecturers, and seven Fellows, have but 778 Pass and 557 Honor—*1,335 attendances, i. e.*, actually 12 less than the three lecturers in Latin, French and German.

It thus appears that the three departments of Latin, French and German have considerably over *one-third* of the whole number of attendances in University College and the Faculty of arts combined. He thinks that no further statement is necessary to show that these three departments have the justest and strongest claims to the first consideration of the Government and the authorities, and that the steps taken to secure that consideration are fully justified by the interests of College and University involved therein.

## F.—Mathematics.

With reference to the memorial A 7.

Professor Baker on 31st January, gives the following statistics of the Arts and School of Science students in the department as a correction of the numbers given in the memorial, and observes that they show increased responsibility and work in the department :—

*Mathematics.*

| —— | 1880. | 1881. | 1882. | 1883. | 1884. | 1885. | 1886. | 1887. | 1888. | 1889. | 1890. | Increase. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arts..... | 143 | 145 | 156 | 144 | 163 | 150 | 173 | 118 | 126 | 152 | 152 | 75 |
| School of Science.. | 12 | 13 | 18 | 17 | 29 | 41 | 46 | 41 | 43 | 49 | 78 | |

He adds that the arguments in the memorial seem convincing that improvements in the departments referred to demand the earnest consideration of those responsible for the University.

G.—Philosophy.

With reference to the comparisons and statistics in the memorial A. 7, of 10th January, 1891, Professor Baldwin gives—

1. A corrected statement of the students in philosophy for 1890 and 1891 as follows :—

Corrected Statement of Students in Philosophy Years 1890 and 1891.

| 1890 Pass. | 1891 Pass. |
|---|---|
| Philos. 34 ; increase since 1880—7. | Philos. (alone.) 186 ; increase since 1880—159. |
| (No Civil Polity) | Since 1890—152. |
| Logic 136 ; increase since 1880—72. | Logic 139 ; increase since 1880—75. |
| | Since 1890—3. |
| **1890 Honor.** | **1891 Honors.** |
| Philos. 45 ; dec. since 1880—14. | Philos. (alone.) 63 ; inc. since 1880—4. |
| No Civil Polity. | Since 1890—18. |
| Logic 40 ; inc. since 1880—1. | Logic, one course in new curriculum. |

The only *decrease* due to the separation of Political science from Philosophy, but more than made up by the *increase* in the present year 1891.

2. He objects to the numbers in the class lists from 1880 to 1890 as a reliable basis of comparison of the work done, because—

(*a*) They represent those who pass, not those who attend, with whom the teacher is concerned ; he points out that the varying proportion of those who fail is valuable as indicating where there is a lack of teaching free.

(*b*) A single year should not be compared with one other single year ; because one or both may be abnormal ; as were both 1880 and 1890, each of which just preceded the commencement of a new curriculum.

(*c*) The pass lists do not include students from affiliated colleges, whom the University teaches but does not examine.

(*d*) The new curriculum, *i. e.* the figures for 1891, should be considered in dealing with each and all of the departments.

(*e*) The year 1890 was abnormal and useless for comparison because

(1) There was no professor in the department.

(2) Students in Civil polity (now Political economy) had been counted up to 1890, but then ceased to be so counted ; thus making a difference of at least 15, and accounting for the decrease in honor Philosophy.

(3) There is an increasing number of students from the affiliated colleges taking lectures in the department, at a very low estimate, 15 for 1890 ; these are not counted.

(4) The new curriculum makes an enormous difference in the number of pass students for 1891, shown by the registrar's lists, giving :—

| | |
|---|---|
| Pass in Philosophy, '90 | 34 |
| " " '91 | 186 |
| Increase | 152 |
| Honor, '90 | 45 |
| " '91 | 63 |
| Increase | 18 |

3. He suggests that the time, growth, and condition of any department is best shown not by comparison with any other department, but by taking the proportion of students in the department to the whole number in the University at the same date, and that 1881 and 1891 would be the best years, as they are those which inaugurated new curricula.

4. While contesting the accuracy of the figures given in the lecturers' memorial, he adds that a very strong case remains for the Modern Language departments as regards representation on the Council, as to which he thinks the lecturers should be admitted to that of the College; and as regards remuneration, as to which he thinks the lecturers should be paid at least $2,000 a year, and that whatever else is done the salaries of all the lecturers should be increased at once.

He adds that if new professorships are created they should be filled after public competition only, and certainly not by the hasty appointment of any one.

## H.—Chemistry.

With reference to the lecturers' memorial of 10th January, 1891.

Professor Pike observes as follows:—

The statistics are misleading so far as the department of Chemistry is concerned, because

(*a*) They contain only a small section of the total number of students to be taught, no account being taken of students of the School of Science and of the Medical Faculty.

(*b*) The University class lists are no guide to the numbers taught, because they exclude those who fail in several subjects, though they may have been the best of the year in some departments; and because they include students who have not been taught in University College or the University Laboratories.

Professor Pike subjoins lists of students actually taught as per registrar's lists continued up to 1887; and from reports of the School of Science with comparisons as follows:—

Pass Students.

| 1880. | 1881. | 1882. | 1883. | 1884. | 1885. | 1886. | 1887. | 1888. | 1889. | 1890. | 1891. | —— |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 110 | 114 | 84 | 60 | 51 | 59 | 67 | ..... | 52 | 68 | ..... | ..... | University students. |
| 12 | 14 | 11 | 17 | 25 | 35 | 49 | 46 | 43 | 50 | 21 | 24 | School of Science. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 140 | 131 | 145 | 145 | Medicals. |
| 122 | 128 | 95 | 77 | 76 | 94 | 116 | ..... | 235 | 249 | ..... | ..... | Totals. |
| 58 | 26 | 42 | 30 | 31 | 26 | 48 | 48 | 47 | 54 | 57 | ..... | As in statistics. |

The above numbers are from lists furnished by the Registrar which I still have and which were discontined in the year 1887 and also from the reports of the School of Science.

Honor Students.

| 1880. | 1881. | 1882. | 1883. | 1884. | 1885. | 1886. | 1887. | 1888. | 1889. | 1890. | 1891. | —— |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | 18 | 16 | 16 | 22 | 17 | 20 | 19 | 18 | 22 | 21 | ..... | Nos. as given in table. |
| ..... | ..... | ..... | 32 | 30 | 29 | 24 | 32 | 36 | 39 | 50 | ..... | Actually taught. |

I.—Mineralogy and Geology.

With reference to the comparisons and statistics in the Memorial A7, Professor Chapman by letter of 26th January, 1891, observes that—

The memorial much understates the number of students attending the department; no account being taken of the School of Science students in attendance.

That instead of 113, there are between 220 and 230 students.

| | |
|---|---|
| Pass | 140 to 150 |

Honor students taking practical work:

| | Undergrads. | Engrs. | |
|---|---|---|---|
| 2nd year. | 29 | 22 | 51 |
| 3rd " | 15 | 13 | 28 |
| 4th " | 2 | 1 special | 3 |
| Total from | | | 222 to 232 |
| That for 1888-9 the number was | | | 112 |
| And for 1886-7 | | | 131 |

Professor Chapman observes that it is quite misleading to compare the amount of labour and time occupied in teaching Modern Languages with that involved in teaching Practical Science, in which so much manual work is involved, and so much preliminary preparation required for each lecture and lesson, that he has generally to spend an hour in preparing material for the lesson, during which (lasting commonly two hours and sometimes more) he goes from student to student explaining and demonstrating.

Further, that after lectures, much time is required to re-arrange and put away the specimens and diagrams; so that each lesson requires at least three hours and each lecture two.

He does not deny the need of additional assistance in Modern Languages, but says the chief drudgery in these will be in looking over and correcting exercises, and that there are many poor French and Germans (male and female) in the city who could be engaged at any slight remuneration to do the work.

K.—Biology.

With reference to the Memorial A7, Dr. Macallum by letter dated February 10th, received April 1st, observes:—

1. The statistics hardly yield a fair view. For the last ten years honor work in the department began in the second year, thus keeping the number of students 40 per cent. less than in the course beginning the first year. In consequence of the change, the number of honor students has increased by 39 per cent., there being now 62 students in the course as against 21 in 1880.

2. He does not think that the number of pass students given since 1880 is quite correct. According to his memory there were more than two pass students in 1885 when he was examiner in Biology, and he knows that the number of students attending lectures has in each year since 1885 been larger than is stated. This may be accounted for by their not going up for, or passing, their examinations.

3. In each year since 1887 there have been from 110 to 150 medical students, taking pass and honor subjects in Biology and Physiology. These are University Students taking the University examinations, but are not mentioned in the tables.

4. There are other factors besides the number of students attending an hour's class; *e.g.*, the number of hours spent in class work is equally, or far more important, as longer

hours and students laboratory work are very much more irksome and wearying than giving even four or five lectures during the day. The class hours in French and German, stated at 20 hours per week, are doubtless heavy, but they are less than is necessary in the Biological department. The laboratory staff are engaged 71 hours a week in lectures and practical class work, or, excluding the purely medical classes, 66 hours or 22 hours for each member of the staff. This is exclusive of the time spent in preparing for demonstrations, which takes up every available hour of the day.

## L.—Political Science.

With reference to the Lecturer's Memorial A.7, Professor Ashley observed

(*a*) That it presents a strong *primâ facie* claim for additional assistance; not so much on account of the comparative, as on account of the absolutely large numbers of students.

(*b*) That as the work, both pass and honor, for the first and second years, in both French and German, seems from the Calendar to be of a comparatively elementary character, the necessary assistance might best be secured by the appointment of tutors, as in a plan now before the Senate, without necessarily approving of any other feature of that plan.

(*c*) That, judging merely from the figures, it would seem that additional aid was required in History almost as much as in French or German.

(*d*) That the memorial, while undoubtedly presenting good reasons for strengthening the teaching staff in Latin, French and German, seems to lay undue emphasis on the numbers of students as an indication of the extent of the need. A lecture on the History, of literature, on general political or constitutional History, on Philosophy, on Philology or on the higher Mathematics, may involve more strain on the teacher than two or three hours teaching of elementary grammar, or listening to students translating.

## Modern Languages.

On the 11th April a deputation of the Modern Language Association met the committee, and discussed the subject, and presented the following paper :—

The following table shows the teaching staff of the various branches of study in the Faculty of Arts, and also the expenditure for teaching. This table of expenditure does not take into account the very large sums spent on buildings and equipment in Physics and Natural Science.

| Subject. | Professors. | Lecturers. | Fellows. | Total annual cost of teaching. |
|---|---|---|---|---|
| Greek | 1 | 1 | 1 | $4,850 00 |
| Latin | | 1 | | 1,750 00 |
| Oriental languages | 1 | ..... | ..... | 2,000 00 |
| English | 1 | 1 | ..... | 4,500 00 |
| Ethics | 1 | ..... | ..... | 3,250 00 |
| Metaphysics | 1 | ..... | ..... | 3,250 00 |
| History and Ethnology | 1 | ..... | 1 | 2,800 00 |
| Physics | 1 | 1 | 1 | 5,100 00 |
| Mathematics | 1 | ..... | 1 | 3,000 00 |
| Mineralogy and Geology | 1 | ..... | 1 | 3,600 00 |
| Biology | 1 | 1 | 1 | 5,100 00 |
| Chemistry | 1 | ..... | 1 | 3,600 00 |
| Political Science | 1 | ..... | 4 | 3,500 00 |
| French | ..... | 1 | | 1,833 33 |
| German | ..... | 1 | 1 | 1,333 33 |
| Italian and Spanish | ..... | 1 | | 1,833 33 |

The inferiority of status accorded to French, German, Italian and Spanish, complained of by the Modern Language Association, is shown by the above table. Every other branch of learning, with the sole exception of Latin, is under the charge of a professor, while the subjects in question are taught by lecturers who are of inferior rank academically, and who have no voice in the administration of the departments under their care. The subordinate rank which is assigned to these languages in the organization of the University and College is furthermore shewn by the amount of money expended in payment of the teachers of these subjects, as compared with the expenditure in other subjects. It will be observed that in all the modern languages the expenditure is less than in any other department (except Latin), and that in some cases the difference is very great.

The following facts and considerations, in the opinion of the Modern Language Association, show the intrinsic value of these languages as subjects of study, and the important position occupied by them in the work of the University and the high schools, and prove that the inferiority of status referred to above is by no means warranted.

The demand which exists in the University and College for modern language teaching, relatively to that in other subjects, is shewn by the following comparative statement for the session of 1890-1 furnished by the registrar.

NUMBER OF STUDENTS ATTENDING PASS LECTURES.

(Including all Honor Students except Fourth Year Latin and Greek).

| SUBJECT. | Greek. | Latin. | Mathematics. | Physics. | English. | French. | German. | Chemistry. | Biology. | Mineralogy and Geology. | Metaphysics and Ethics. | Oriental Languages. | Political Science. | History. | Law. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fourth Year | 8 | 21 | 22 | 22 | 47 | 29 | 24 | ..... | ..... | ..... | 23 | 10 | 30 | ..... | 15 |
| Third " | 22 | 29 | ..... | 31 | 48 | 42 | 39 | ..... | ..... | ..... | 31 | 9 | 33 | 56 | ..... |
| Second " | 60 | 116 | ..... | 67 | 102 | 142 | 135 | ..... | ..... | ..... | 157 | 22 | ..... | 117 | ..... |
| First " | 72 | 174 | 161 | ..... | 193 | 139 | 145 | 50 | 86 | 95 | ..... | 36 | .... | 128 | ..... |
| Total | 162 | 340 | 183 | 120 | 390 | 352 | 343 | 50 | 86 | 95 | 211 | 77 | 63 | 301 | 15 |

71

NUMBER OF STUDENTS ATTENDING HONOR LECTURES.

| SUBJECT. | Greek. | Latin. | Mathematics. | Physics. | English. | French. | German. | Italian. | Spanish. | Oriental Languages. | History. | Chemistry. | Mineralogy and Geology. | Biology. | Political Science. | Metaphysics and Ethics. | Ethnology. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fourth Year | 14 | 14 | 2 | 8 | 30 | 17 | 17 | 16 | 15 | 2 | ..... | 1 | 2 | 4 | 19 | 13 | 27 |
| Third " | 15 | 15 | ..... | 25 | 39 | 22 | 21 | 21 | 21 | 1 | 23 | 34 | 16 | 10 | 23 | 28 | ..... |
| Second " | 21 | 21 | 17 | ..... | 61 | 42 | 43 | 38 | 38 | 2 | 46 | 46 | 30 | 24 | 46 | 22 | .... |
| First " | 35 | 35 | 22 | ..... | 65 | 39 | 35 | 31 | ..... | ..... | ..... | 31 | 31 | 27 | ..... | ..... | ..... |
| Total | 85 | 85 | 41 | 33 | 195 | 120 | 116 | 106 | 74 | 5 | 69 | 112 | 79 | 65 | 88 | 66 | 27 |

It will be observed that the number of honor students in each of the three departments of French, German, Italian and Spanish exceeds that of any other honor department with the single exception of English, while in many cases, the contrast is exceedingly marked.

In pass students the same numerical importance is to be noted. The number of pass students in French and German respectively exceeds that of any other pass subject except English. From this point of view, then, it appears that those subjects which have the strongest claims to organization and equipment are precisely the ones which are relegated to an inferior position.

Further, the inferiority of status complained of is not warranted by the position which these languages occupy in the courses of study prescribed in them by the curriculum of the University. Attention is specially directed to the high character of the course prescribed in honor Modern Languages. It is believed that this course will compare favorably with any other honor course prescribed in the University of Toronto both as regards the standard of excellence required, and in the usefulness of the course for purposes of education and culture. The importance of modern language study in the University is still further proved by the fact that a knowledge of either French or German is, as pass work, demanded of students in every honor department prescribed by the curriculum ; so that in this respect these languages are of fundamental importance in the work of the University.

Nor is the inferiority of status warranted by the position in which modern languages occupy in the high schools and collegiate institutes of Ontario. What has been said as to the fundamental character of the French and German as University studies s also true as regards the work of the secondary schools. In these, French and German are studied by a large and rapidly increasing number of pupils. The aggregate number of pupils in French and German is now considerably in excess of the number in Latin and Greek. This fact may be regarded as an index of the high position they now occupy, and of their increasing importance in secondary education in this country.

Not only do the reasons given above prove that the inferior status to the modern languages is unwarrantable, but, on the other hand, it was noted that their organization on a par with other branches of learning is provided for in the University Act (50 Vic. chap. 43, secs. 5 and 77). It is there expressly stated that in University College French and German shall each be taught by a professor, lecturer, and Fellow, while in the University of Toronto the teaching, and the implied organisation of Italian and Spanish as a distinct department is provided for upon the same footing with History, Physics, Mathematics, and other University subjects.

What has already been said would, we believe, be good and valid reasons for the re-organization on such a basis as justice and expediency alike demand ; but an examination of the teaching staffs of the various universities of the United States reveals an additional argument of very great force. We find that the uniform practice there is to afford an honorable status to the languages in question, a status indeed equal to that of Classics. That this is the case, the following table clearly proves :—

The staffs of American universities in Classics and Modern Languages:

P.—Professor; A. P.—Associate Professor; T.—Tutor, Instructor or Lecturer.

| College. | Latin. | Greek. | English. | French. | German. | Remarks. |
|---|---|---|---|---|---|---|
| Cornell. ... | 1 P.....<br>1 A. P..<br>1 T..... } 3 | 1 P .....<br>1 A P.. } 2 | 2 P.....<br>3 A. P..<br>3 T..... } 8 | 1 P.....<br>3 T..... } 4 | 2 P .....<br>2 T .... } 4 | In English 1 P. Emeritus. |
| Columbia .. | 1 P. ...<br>1 T..... } 2 | 1 P.....<br>1 A P ..<br>3 T..... } 5 | 1 P.....<br>1 A. P..<br>4 T..... } 6 | 1 P.....<br>2 T..... } 3 | 2 P ....<br>1 T .... } 3 | |
| Yale ..... | 2 P.....<br>2 T..... } 4 | 1 P.....<br>1 A. P..<br>2 T..... } 4 | 3 P.....<br>2 T..... } 5 | 1 P.....<br>1 A. P..<br>2 T..... } 4 | 1 A. P..<br>3 T .... } 4 | Prof. Whitney as T. in French, has a professor's rank. |
| Michigan .. | 1 P.....<br>1 A P ..<br>1 T .... } 3 | 1 P.....1 | 1 P.....<br>1 A. P..<br>1 T..... } 3 | 1 P.....<br>1 A. P..<br>1 T..... } 3 | 1 P ....<br>2 T .... } 3 | |
| Virginia.... | 1 P.....<br>1 T..... } 2 | 1 P.....1 | 1 P.....1 | 1 P.....<br>1 A. P.. ... | In Fr. &<br>German } 2 | |
| Kansas..... | 1 P.....<br>1 T..... } 2 | 1 P.....<br>1 T..... } 2 | 1 P.....<br>1 T..... } 2 | 1 P.....<br>1 T..... } 2 | 1 T ..... | T. in Greek also T. in German. |
| Bowdoin ... | 1 P ....<br>1 T .... } 2 | 1 P ....<br>1 T .... } 2 | 1 P ....<br>1 T .... } 2 | 1 P. in F. & G ..... } 2<br>1 P. in F ..... | | T. in Latin also P. in French. |
| Amherst . | 1 A. P .<br>2 P .... } 3 | 2 P .... } 2 | 1 P ....<br>1 A. P . } 2 | 1 P ..... | 1 P ..... .. | |
| California .. | 2 P ....<br>1 T .... } 3 | 2 P ....<br>1 T .... } 3 | 1 P ....<br>1 A. P .<br>2 T .... } 4 | 1 A. P ...1 | 1 P ....<br>1 T.... } 2 | 1 P. in Latin.<br>1 P. in Greek.<br>Temporary. |
| Williams..... | 1 P .....1 | 2 P .....2 | 3 P .....3 | 1 P ....<br>1 A. P . } 2 | | |
| Howard.... | 3 P ....<br>3 T. and Greek } 6 | 3 P .....3 | 2 P ....<br>3 A. P .<br>2 T .... } 7 | 3 P ....<br>4 A. P .<br>1 T .... } 8 | 2 A. P . } 2 | |

| | | |
|---|---|---|
| Totals—Professors, | Latin and Greek (less two temporary) | 34 |
| " | English (less one emeritus) | 26 |
| " | French and German | 33 |
| On Staff, | Latin and Greek | 57 |
| " | English | 43 |
| " | French and German | 52 |

In a word, the Classics and Modern Languages (other than English) are on a footing of almost perfect equality, all under the charge of professors, with associate professors and assistants where necessary.

The members of the Modern Language Association regard the present condition of things as highly prejudicial to the interests of modern language study, not only in the provincial University, but also in the high schools and collegiate institutes of the province. Owing to the want of status in the University, the administration of these departments through the Senate and other governing bodies is largely in the hands of those, who are necessarily ignorant of the circumstances and wants of branches of study, with the teaching of which they are not directly concerned. It is true that by the courtesy of the Senate and its committee, the lecturers in Modern Languages have at times been consulted on matters connected with their work. It is equally true, however, that on various important occasions they have had no opportunity of presenting their views

Very recently, an important and unexpected change seriously, and, we believe, injuriously affecting the standing of the modern languages, was made in the curriculum without the lecturers in these subjects having been invited, or permitted to present their side of the question.

Moreover, the subordinate status of the Modern Languages has a tendency to lead pupils in the High Schools, preparing for the University, to believe that those subjects are of less importance than others in the curriculum, and that they are unworthy of the same degree of careful and attentive study, as that which must be given to other subjects.

In conclusion, we would say, that the status of French and German to-day in the University of Toronto tends to degrade branches of study generally regarded as essential to liberal culture; that it is unfair to the very large numbers of students who, pursuing pass and honor courses in these languages, are denied the help of properly remunerated teachers and professors, and that it is also detrimental to the cause of provincial secondary education; that such injustice is not warranted by the condition of other departments, or by the state of the University finances; that it is harmful to the prestige of the University, at home and abroad, to have it known that in Toronto University badly equipped departments exist; that it is a source of possible, indeed actual friction and conflict between members of the Faculty; and that it is condemned by comparison with the universal practice of other colleges of this continent.

In view of which circumstances, we ask that professorships be instituted in the Modern Languages.

---

*Recommendation.*

The evidence above summarized so completely demonstrates the need for further teaching strength, that it would be waste of time to enlarge upon it.

It is proper, however, to observe that the present difficulty is intensified by the fact that many students take French and German without any, or with but the slightest, previous knowledge of the subjects.

These elements should be acquired in the high schools, and not in the University. It is to be hoped that they may, in the course of the next few years, be taught universally in the schools. It is suggested that provision should be made by the University to check the practice of students taking up French and German without proof that they have already acquired an elementary knowledge of them.

It is clear that, did funds permit, the staff should be at once placed on the statutory and proper footing of a professor, a lecturer and a Fellow in each of the branches of French and German; and that additional strength should be given in Italian and Spanish.

The following recommendations are made :—

*French :*

As in the first order of urgency—

The appointment of a temporary lecturer, pending the appointment of a professor.

As in the second order of urgency—

The appointment of a professor.

*German :*

As in the first order of urgency—

(1) The relief of the present lecturer from his duties as librarian, in order that he may devote his whole time and energy to German.

(2) The appointment of a temporary lecturer, pending the appointment of a professor.

As in the second order of urgency—
The appointment of a professor.

*Italian and Spanish:*

As in the first order of urgency—
The appointment of a fellow.

As in the third order of urgency—
The appointment of a professor.

---

LATIN.

The evidence on the subject of Latin is as follows:—

1. 16th October, 1890.
   The memorial above-mentioned as No. 3 in modern languages.
   (*a.*) The memorial of facts in support thereof mentioned as No. 3a. in Modern Languages.

2. 10th January, 1891.
   The memorial above-mentioned as No. 7 in Modern Languages.

3. November, 3rd, 1890.
   Letter of Mr. Dale for the information of the Senate Committee above-mentioned, stating that the most urgent requirement in the department of Latin is the immediate appointment of a professor to take charge of the subject, and that its urgency was obvious from the two considerations:—
   (1.) That the number of students in Latin is greater than that in any other department in arts save perhaps English.
   (2.) That with the present teaching facilities, viz., a lecturer and a fellow (who is also a Fellow in Greek), there is practically no provision whatever for teaching any of the honor work in any of the years, and appending a statement of the students registered in Latin during the session as follows: honors 82, pass 246, total 328.

4. The report of the above-mentioned Senate Committee that the requirements of the various departments (including that of Latin) were just and reasonable.

5. The report of the Board of examiners set out above as No. 9 in Modern Languages.

6. Mr. Dale by letter of 24th January, 1891, gives the following statements and tables:—

Requirements for the efficient carrying on of the pass and honor work in the department of Latin, in University College.

These requirements are made with a view to the probable increase in the number of students during the next five years.

(*a*) The number of students registered during the present session in the various years are respectively :—

| | Pass. | Honor. | |
|---|---|---|---|
| IV. Year ..... | 21 | 13 | |
| III. " ..... | 30 | 14 | NOTE.—The numbers n the pass of the 1st, 2nd, and 3rd years include also the honor students of those years respectively, as the honor students of those years take the pass work in the department. |
| II. " ..... | 114 | 21 | |
| I. " ..... | 173 | 35 | |
| Total ..... | 338 | 83 | |

The staff, at present trying to deal with this large number of students, consists of one lecturer and half the services of the classical Fellow. Fourteen lectures per week are at present given, one of which is given by the department of Greek.

In no single year, either in the pass work, or in the honor work, can the work be efficiently carried on with the present staff, as will be seen from the following scheme which I consider indispensable for the efficient conduct of the department.

(*b*) The pass class of the first year should be divided into *four* sections (A. B. C. D.); the pass class of the second year into *three* sections (A. B. C.)

The subjects on which lectures are delivered are *four*, viz., authors, composition, sight translation and Roman history.

The following schemes will show the number of lectures required in the pass and honor courses respectively :—

Pass.

| | Authors. | Composition. | Sight Translation. | History. | Total. |
|---|---|---|---|---|---|
| IV. Year ..... | 1 | 1 | 1 | ..... | 3 |
| III. " ..... | 1 | ..... | ..... | ..... | 1 |
| II. " ..... | 3 | 3 | 3 | ..... | 9 |
| I. " ..... | 4 | 4 | 4 | 1 | 13 |
| | 9 | 8 | 8 | 1 | 26 |

Honors.

| | | | | | |
|---|---|---|---|---|---|
| IV. Year ..... | 2 | 1 | 1 | 1 | 5 |
| III. " ..... | 2 | 1 | 1 | ..... | 4 |
| II. " ..... | 1 | 1 | 1 | 1 | 4 |
| I. " ..... | 1 | 1 | ..... | ..... | 2 |
| | 6 | 4 | 3 | 2 | 15 |

The blank spaces indicate that the lectures, there omitted, are combined with those of another year, *e. g.*, the composition of the third year pass is combined

with that of the fourth year pass, etc. Thus, it will be necessary to provide for the delivery of twenty-six pass lectures and fifteen honor lectures, or a total of *forty-one* per week. This cannot be done with less than *four* properly qualified instructors, viz., professor, two lecturers, and a fellow. By omitting pass sight translation, a most essential subject, but a subject not yet introduced into College lecturing, the lectures could be reduced to *thirty-three* and one of the lecturers dispensed with for a time.

It may seem that this demand is a large one when compared with the present equipment, but it must be remembered that the department of Latin has not yet been organized, that it is the heaviest and probably one of the most important departments in either College or University, and that it has received probably the least encouragement from the authorities of any of the departments in the University.

*Recommendation.*

This evidence makes a case at least as strong for Latin as has been made for French and German ; and the same observations apply.

The inequality of strength between Greek and Latin, having regard to all the conditions, is very marked.

It appears that there is some interchange of work between the members of the two staffs. It is recommended that, pending the improvement of the staff in Latin, all possible assistance should be rendered to Latin by the staff in Greek.

The following recommendations are made :—

First order of urgency—

(1) The appointment of a temporary lecturer pending the appointment of a professor.

(2) The assignment of the Fellow in Greek and Latin to Latin.

Second order of urgency—

The appointment of a professor.

---

GREEK.

The evidence on the subject of Greek is as follows :—

1. January 9th, 1891.

The memorial of Mr. Keys, lecturer in English, and Mr. Fairclough, lecturer in Greek, abstracted as No. 3 in the statement of papers under head D. English

2. Professor Hutton, by memorandum of 24th January, 1891, reports on the needs of the departments as follows :—

(1) The present staff consists of a professor, a lecturer, and a Fellow (whose services however are shared with the department of Latin).

(2) The staff, according to the University Federation Act, is to consist of a professor, a lecturer, and a Fellow in Greek (whose services are to be confined to Greek).

(3) The efficiency of the teaching in Greek would be increased up to the attainment of a fair standard, were the Act brought into force ; the present Fellow

being engaged almost entirely, as a matter of fact, in teaching Latin. During the present term, *e.g.*, he takes two lectures per week in Greek, and against this the Greek lecturer takes one per week in Latin, and the professor of Greek one per fortnight in Latin; so that the present teaching in Greek could almost be done without any Fellow at all. The appointment of a Fellow in Greek alone would therefore make more difference than appears at first sight.

(4) But if the scheme now under discussion by the Faculty (in accordance with a resolution of the Senate recommending more elaborate supervision, especially of the pass classes) were to be carried out, the department of Greek would require at once two Fellows at the very least, and strictly and literally three (or even four), if the scheme at present discussed were to be minutely followed. The essential elements of this scheme are the subdivision of the classes so that no class as a rule contain more than 25 or 30 students taking the pass course, or again more than 12 students taking the honor course. Taking as a basis for calculation the number of students in Greek to be 90 in pass classes and 55 in honor classes (according to the figures recently furnished), and assuming that the more elaborate supervision of the pass work would involve some such scheme of lectures as follows:—

| | No. of classes of not more than 25. | Lectures per week on Authors to each class. | Lectures per week on prose. |
|---|---|---|---|
| 4th year pass..... | 1 | 2 | 1 |
| 3rd year pass..... | 1 | 2 | 1 |
| 2nd year pass..... | 2 | 2—4 in all. | 1—2 in all |
| 1st year pass..... | 2 | 2—4 in all. | 1—2 in all. |

Then results a total in pass lectures per week of 18 as against present total of 5.

Assuming that the same thorough supervision is to be extended to the honor work, some such scheme as follows would be reasonable:—

| | No. of classes of not more than 12. | Lectures per week on authors to each class. | Lectures on prose, etc. |
|---|---|---|---|
| 4th year honors .. | 1 | 4 | 2 |
| 3rd year honors .. | 1 | 4 | 2 |
| 2nd year honors .. | 2 | 2—4 in all. | 2 |
| 1st year honors .. | 2 | 2—4 in all. | 2 |

Total of honor lectures per week, 24, as against present total of 13.

Full total of lectures in Greek (pass and honors) per week, 42, as against present total of 18.

(5) The present total of 18 representing, as has been said in section (3), substantially the work of two men, and 10 lectures per week being taken as a reasonable average for a professor or lecturer, and 5 lectures per week for a Fellow, it appears that, if Fellows are still to be appointed under the present system, *i.e.*, with leisure for private work, the scheme proposed above would require at once a staff of five or six, according to the precise character of the lecturer; thus, if all the lecturers except the professor and permanent lecturer were to be Fellows, four Fellows would be required, and the whole staff in Greek would number six.

If again, the permanent staff consisted of two professors and a lecturer, two Fellows would be probably sufficient, and the whole staff would number five.

(6) So long as the salary of a Fellow is only $500 per annum, I do not think the University can fairly ask him to lecture for more than five times in the week; the opportunity of private study being one of the attractions which at present enables us to secure competent men (and in Greek we have had most competent men) at a salary so inadequate.

(7) The scheme as outlined above, it will be noted, is only calculated to meet the needs of 90 pass students and 65 honor students. Any increase, therefore, in these numbers (and it is probable that the honor students' increase will more than counterbalance any further falling off in the number of pass students), will require great additions to the staff.

(8) If I may be permitted to suggest an outline for the remodelling of the Greek staff when opportunity permits, on the basis of the scheme above, I should recommend some such organization as the following:—

(1) One professor of Greek literature,
(2) " " history and philosophy,
(3) One associate professor of Greek literature,
(4) Two Fellows in Greek, if possible paid a higher salary, ($800), and prepared to give rather a larger part of their time to teaching than at present.

In other words the running expenses of the department would be increased from some $4,750 per annum as at present, to some $9,700.

(10) I do not present this scheme with any idea that it is at present practicable, but on the understanding that what is asked of the Faculty is a statement of the recommendations each professor would make, were the University's revenues sufficient for all the reasonable purposes of his department.

With reference to the memorial A.7, Professor Hutton, adverting to the paragraph as to the probable effect of certain changes in the curriculum, states that he supposes this to mean, among other things, that these changes are calculated to lead to an abnormal and sudden rush of pass students into French and German. He is now convinced that this is the case, and that the principal cause therefor is the discrimination against pass Greek to which he is directing the attention of the Senate.

*Recommendation.*

The following recommendation is made:

Second order of urgency.—The appointment of a Fellow.

It is recommended that the further consideration of this branch be postponed.

---

ENGLISH.

The evidence on the subject of English is as follows:

1. November 7th, 1890.

The letter of Professor Alexander to the Registrar for the information of the above Committee, stating that the individual instruction needful for the pass students of the first and second years requires a division of existing classes into sections of not more than 30 students each; that this, with present numbers, requires 9 additional hours of teaching weekly; that in 1892-3 under the new curriculum three or four hours of additional teaching in the higher years would be required, and that the addition of a Fellow to the present English staff would enable this work to be covered. Further stating that there is great need of more practical instruction in English composition; that under the present system, by

which the University takes no account, save through examinations, of the work done during the session, it is impossible to get students to do much in the actual writing of essays; that it is highly desirable that students should be required to write a certain number of essays each session, the proper examination and criticism of which would involve a large amount of time and arduous work not to be satisfactorily performed by a Fellow; and that the addition of a lecturer who would take charge of this department is needful, if the University is to make provision for the proper study of composition.

2. The general report of the above-mentioned Senate Committee as above stated.

3. January 9th, 1891.

The memorial of Mr. Keys, lecturer in English, and Mr. Fairclough, lecturer in Greek and Grecian History, representing that their present remuneration, $1,500 a year, is wholly insufficient to enable them to live in a manner becoming their position; still less is it sufficient to provide them with books and apparatus necessary for their work; that its inadequacy is best shown by a comparison with the salaries paid to the teachers in some of the Toronto Schools, which will show that the salaries paid to assistant masters in the Collegiate Institute and to the teachers of some of the public schools are equal to theirs, and that at least one assistant master is paid considerably more; and further, representing that their work being professional, their salaries should be greater than those of public school teachers, and at least as high as those of head masters in collegiate institutes; and praying, in view of representations made by other lecturers, for equal consideration.

4. November 29th, 1890.

Letter of Mr. Keys to the Chancellor representing that as the claim of certain sub-departments for representation in the University Councils is being pressed, that of the sub-department of English philology should be considered, and pointing out:

(1) That philology is the sole work in second year pass English, Anglo-Saxon is required of all honor students throughout, and Gothic forms an important part of the fourth year honor work.

(2) That philology is obligatory on all pass students, and the honor course in English is the most popular, the attendance in honor lectures alone being about 150.

(3) That at Oxford and Cambridge there are separate professorships of Anglo-Saxon; in Harvard and Johns Hopkins there are associate professors of Anglo-Saxon and old English; that at Yale, Columbia, Cornell and Ann Arbor there are separate chairs for literature and language.

(4) That there is a practical autonomy, the instruction in philology being entrusted wholly to the lecturer, and the teaching in Anglo-Saxon and Gothic being as distinct from that in literature as the teaching in physiology from that in biology.

5. November 29th, 1889.

Letter of Professor Alexander to the Chancellor suggesting that the sub-department of English language has similar claims to those advanced in other sub-departments for more distinct recognition and more adequate representation, referring to his inaugural address of October 12th, 1889, as indicating his view that the subjects of language and literature were distinct, and that there should be a chair for language; and expressing the opinion that the time had now arrived for action, concurring in Mr. Keys' letter, and stating that at present Mr. Keys has the whole of the philological side of the department.

6. The report of the Board of examiners set out as No. 9 in Modern Languages.

7. By letter of April 10th, 1891, Mr. Keys states as follows:

In presenting a statement of the work done in English, Philology and Rhetoric, the department under my care, a few words of explanation are necessary.

By the arrangement agreed upon by Professor Alexander and myself at the time of his appointment, as to a permanent division of labor between us, the language fell to my share. Such a division of labor rendered possible a more systematic study of the history of the language in connection with the reading of Anglo-Saxon and Middle English texts. The importance of this work has been repeatedly referred to by the President, and it is gratifying to know that at last our course may challenge comparison in this respect with those of the best American and German universities.

But in this, the first session under the new curriculum, it is impossible to bring into operation in the upper years changes which presuppose in the student a knowledge that he has not hitherto had an opportunity of acquiring. It has been necessary, therefore, to limit the amount of Anglo-Saxon, and in consequence the work done this year must not be taken as a criterion of the amount that will be required next year or the year after, when the division of work in the Fourth Year will allow a student to graduate in honors in Teutonic languages, including, on the linguistic side, Anglo-Saxon and Gothic, besides all forms of German. At least twelve or fourteen lectures in English linguistics will then be required. Before that time it is to be hoped that means will be at hand for such an equipment of the department as was suggested by Professor Alexander in his inaugural address.

During the past session I have lectured once weekly to the honor students of the 1st, 2nd and 3rd years on Anglo-Saxon. In addition, I have given a course on Spenser to the honor students of the 1st and 2nd years, and one on Macbeth to the honor students of the 3rd year. A pass course on the development of the language has been given to the 2nd year, and one on Rhetoric, based on the prose work set down in the curriculum, to the 1st year. In connection with these pass courses essays have been written by the students and examined by me to the number of over one hundred.

I have thus delivered five lectures weekly, and examined from three to a dozen essays per week through the session.

*Recommendation.*

The following recommendation is made:

Second order of urgency.—The appointment of a fellow.

It is recommended that the further consideration of this branch be postponed

---

PHYSICS.

The evidence on the subject of Physics is as follows:—

1. September 4th, 1890.—Letter from Professor Loudon to the Vice-chancellor, showing that the changes in the chemical, biological and geological departments, with regard to requirements in Physics, rendered needful some provision for additional teaching in Physics, as without this the students in these other, departments could not be given the required instruction in Physics.

2. September 3rd, 1890.—Letter from Professor Wright to Professor Loudon pointing out requirements of the new curriculum as to instruction in Physics

for Natural science students embracing a course with laboratory work for second year honor men, and adverting to the need in physics of students in the Physico-chemical department.

3. Professor Loudon.—Memorandum of work of instruction performed by the present staff, and numbers of students from different departments requiring instruction in Physics.

As provision has been made for a lecturer in Physics to meet the demands the details are not given here.

4. Professor Loudon, by letter of 3rd February, transmits the following tables, A, B and C, as showing the present condition of the department :—

A.—Courses of Experimental Lectures on Physics.

| Year. | Numbers in Classes. | | Lectures per week. | Length of Course. | Subjects of Lectures. | Lecturer. |
|---|---|---|---|---|---|---|
| I. | Medical..... 76<br>Arts..... 30 | — 106 | 2 | 15 weeks. | Introductory course..... .... | Professor McKay. |
| II. | Arts, Pass... 48<br>Honor..... 17<br>Engineers.... 22 | — 87 | 2 | 22 " | Mechanics.....<br>Hydrostatics .....<br>Heat ..... | Professor Loudon.<br>Mr. W. J. Loudon. |
| III. | Arts, Pass... 8<br>Honor..... 18<br>Engineers.... 22 | — 48 | 2 | 22 " | Optics.....<br>Electricity .....<br>Magnetism ..... | Professor Loudon.<br>Mr. W. J. Loudon. |
| IV. | Arts, Pass... 14<br>Honor..... 8 | — 22 | 2 | 8 " | Acoustics..... | Professor Loudon. |

NOTE.—Each of these lectures involves several hours' work, on the part of the lecturer and mechanical assistant, in preparing the experiments.

B.—Courses of Lectures on Mathematical Physics for Honors.

| Year. | Number in class. | Lectures per week. | Length of course. | Subjects of Lectures. | Lecturer. |
|---|---|---|---|---|---|
| III..... | 18 | 4 | 25 weeks | Statics, Hydrostatics, Optics, Particle and Rigid Dynamics. | Prof. Loudon.<br>Mr. W. J. Loudon.<br>Mr. W. F. Seymour. |
| IV..... | 8 | 5 | 25 weeks | Elasticity, Hydrodynamics, Acoustics, Physical Optics, Electricity and Magnetism, Thermo-dynamics, Least Squares. | Prof. Loudon.<br>Mr. W. J. Loudon.<br>Mr. W. F. Seymour. |
| Total... | 26 | 9 | | | |

NOTE.—The number of lectures per week delivered by the Professor, Demonstrator, and Fellow are, respectively 7 or 8, 5, 2 or 3.

C.—Practical Instruction in Physical Laboratory

| Year and Faculty. | Number in class. | Divisions of class. | Additional Divisions required. | Hours of instruction, Division per week. | Length of Course. | Work done per Student per Session. | Minimum work required per Student per Session. | Instructor's hours per week. | Additional hours needed from Instructors. | Instructor. |
|---|---|---|---|---|---|---|---|---|---|---|
| Arts: | | | | | Weeks. | Hours. | Hours. | | | |
| IV., Honor Physics | 8 | 1 | 1 | 9 | 18 | 162 | 150 | 9 | 9 | W. J. Loudon. |
| III., " " | 4 | | | | | | | | | |
| | 62 | | | | | | | | | |
| " Chemistry | 18 | 3 | | 3 | 17 | 51 | 50 | 9 | | W. F. Seymour. |
| II., " " | 6 | | 1 | 6 | 17 | | 100 | | 6 | |
| " Natural Science | 23 | | 3 | 3 | 17 | | 50 | | 9 | |
| Engineers: | | | | | | | | | | |
| III C. E. | 13 | | 2 | 3 | 17 | | 50 | | 6 | |
| II " | 19 | 2 | 1 | 3 | 12 | 36 | 50 | 6 | 3 | W. F. Seymour. |
| III M. E. | 1 | | 1 | | | | 100 | | 6 | |
| II " | 4 | 1 | | 3 | 12 | 36 | 50 | 3 | | W. J. Loudon. |
| I " | 13 | 1 | 1 | 3 | 12 | 36 | 50 | 3 | 3 | W. F. Seymour. |
| I, II " (Special) | 6 | 3 | | 2 | 8 | | | 6 | | J. S. Plaskett. |
| | | | | | | | | 36 | 42 | |
| Totals: | | | | | | | | | | |
| Honor Physics | 26 | | | | | | | | | |
| Chemistry and Natural Science | 35 | | | | | | | | | |
| Engineers | 50 | | | | | | | | | |
| | 111 | | | | | | | | | |

Professor Loudon remarks that the duties of the staff may be divided into the work (1) of lecturing to the pass and honor classes, and (2) of giving practical instruction in the laboratory. In the former division of the work an introductory course of lectures has been recently added, which meets the wants of first year students in Medicine, Chemistry and the Natural sciences. In the work of the laboratory, however, it has been found impossible to meet the largely increased demands for practical instruction which come for the first time from the honor students in Chemistry and the Natural sciences, and also from students in the recently established department of mechanical engineering in the School of practical science. So great is this demand that whilst there are at present 26 students of honor Physics in the laboratory, there are 85 from other departments, including engineering, who require to be similarly provided for. The extent of the increase in this branch of the work is also shown by the following comparison between the years 1888 and 1890 :—

| | 1888. | 1890 |
|---|---|---|
| Laboratory students (honor Physics) | 13 | 26 |
| " (other departments) | 29 | 85 |
| Totals | 42 | 111 |

A still further increase may be looked for in the present numbers, more especially from the School of practical science, as Professor Galbraith informs me that he expects that the students in mechanical engineering will, within two years, number 58, instead of 18, as at present.

The regular instructors in the department are a professor, demonstrator and Fellow, and there is also a mechanical assistant who has charge of the apparatus and of the workshop. As this staff cannot be expected to undertake more work than is now being done, it will be necessary, in order to meet present requirements, to provide further assistance, the amount of which may be best estimated by supposing the work of lecturing to be assigned to one part of the staff, whilst the practical instruction is undertaken by the other. Under such an arrangement the former work, involving the delivery of about 17 lectures per week, would require the services of a professor and a lecturer ; whilst the practical teaching in the laboratory, amounting to about 75 hours per week, would require at least the services of a demonstrator, an assistant demonstrator and a Fellow. This plan need not necessarily preclude an arrangement, such as exists at present, whereby each member of the staff might take part both in lecturing and in supervising practical work in the laboratory.

*Recommendation.*

The following recommendations are made :—

First order of urgency—

The appointment of an assistant demonstrator, who should hold office for a term not exceeding three years at $700 a year.

Second order of urgency—

The appointment of a lecturer.

This latter arrangement would provide for the assumption by the University of the work done temporarily at present by Mr. A. C. McKay, and paid for at $400 a year out of the 40 per cent. of medical fees reserved ; but thought to be more properly University work required by the new curriculum.

## Mathematics.

The evidence on the subject of Mathematics is as follows:—

1. November 8th, 1890. Letter from Professor Baker to the Registrar for the information of the above-mentioned Senate committee, stating that for the more complete equipment of the department, a lecturer in Mathematics is necessary; and that such an appointment would allow of (*a*) increased attention to the individual needs of the students, by greater supervision of written exercises during the session, and by a greater division of labor; and (*b*) the division of the larger pass classes; and adding that the large and increasing attendance in the pass lectures has made the efficient performance of the work by himself and the Fellow no longer possible.

2. The report of the Board of examiners set out as No. 9 in Modern Languages.

3. Professor Baker states as follows:—

(*a*) The department would receive an equipment commensurate with its present needs by the addition of two lecturers to the present staff of a professor and a Fellow.

(*b*) One lecturer and an additional Fellow would be in part satisfactory.

(*c*) This increase in teaching power would make a division of classes possible, afford closer supervision of the student's work, and make more efficient the means from time to time employed for adding to the usefulness of the department.

(*d*) The fundamental character of mathematical students in the educational system, and the fact that the high school teachers receive their training in the University, involving an intimate relation between University and high school work, make the effective management of this department, in important respects, of greater consequence than labor in departments not so closely connected with the system of secondary education.

(*e*) By a supplementary letter of the 7th February, 1891, he says, that an appropriation of $750 is needed for the purchase of models for the teaching of intermediate and higher geometry; that he has visited Yale, Harvard and Clark Universities, and examined their models; and has procured catalogues from Germany and Sweden, with prices; on which information this estimate is based.

4. By letter of April 13th, 1891, Professor Baker states as follows:—

My salary as professor of Mathematics is $500 a year less than that of others of the staff occupying corresponding positions. The importance of my department, the full attendance at my lectures, and the success of my students at other universities and elsewhere, only make me the more painfully alive to the unfairness of this discrimination. My retention of the office of Dean may be regarded as a compensation. To this latter office, however, no salary attaches, and the rooms I occupy with dining-hall board is no equivalent for the services I render. I wish however you should know that while, as in the past, willing to do all in my power for University interests, I am not solicitous to continue to hold the office of Dean. Such double duties can hardly be to the advantage of my department. They necessarily draw my attention from my subjects. They also prevent me from engaging in important collateral studies. Thus this year I was anxious to get away early to Germany, to be advantageously placed and entirely free to extend my acquaintance with the language, but my connection with the Residence makes my going very doubtful.

I therefore respectfully urge that I be not discriminated against in the matter of salary; and that I be relieved of the office of Dean.

*Recommendation.*

The following recommendations are made :—

First order of urgency—

The appointment of a fellow.

Second order of urgency—

The appointment of a lecturer.

It is recommended that the further consideration of this branch be postponed.

---

PHILOSOPHY.

The evidence on the subject of Philosophy is as follows :—

1. November 5th, 1890. Letter from Professor Baldwin to the above Senate Committee stating that an additional instructor will be needed if the divisional recitation method of instruction be introduced, as is desirable in the pass courses.

2. The report of the Board of examiners set out as No. 9 in Modern Languages.

3. Professor Baldwin observes in answer to the request of the committee :—

(1.) That the general necessity for more efficient teaching of the pass classes cannot be too urgently emphasized; and that, after raising the salaries of the lecturers to a living amount, the adoption of some scheme for improving the teaching methods of the University is our first need.

(2.) That for the efficient teaching of pass Logic, Psychology and Ethics the years should be divided into classes not exceeding thirty each ; which will add from sixteen to twenty hours per week to the work of the staff, not allowing for growth in numbers.

One additional lecturer will be needed for this, the two professors being more than fully occupied with the honor classes.

(3.) That the "lectures" in his department differ from those in languages, Mathematics, etc. in character; as lectures in Philosophy require thorough and profound preparation.

Two of these a day, or ten a week is the utmost that should be required; and are equal to double the number in Modern Languages. Having taught French and German himself he can compare the relative tax imposed on the lecturer by those and by Philosophy.

And this consideration takes away much of the force of the arguments for increased teaching in Modern Languages drawn from simple numbers.

*Recommendation.*

It is recommended that the consideration of these branches be postponed.

---

CHEMISTRY.

The evidence on the subject of Chemistry is given under the head of "Buildings, Etc."

*Recommendation.*

The question of policy raised under that head of course arises as to the staff.

If the recommendation as to the tuition of the medical students in the School of practical science is adopted, then the following recommendations are made :—

First order of urgency—

(1.) (Arts.) Provision that the salary of the demonstrator, recently authorized at $800, shall be fixed at the regular rate suggested for such officers.

(2.) (Medicine.) Provision, out of the forty per cent. reserved from the medical fees, for the extra strength required for the tuition of the medical students, as follows :—

A demonstrator.

---

MINERALOGY AND GEOLOGY.

Reference is made to the evidence and recommendations under the head of "Buildings, Etc."

There is no demand for aid in tuition.

---

BIOLOGY.

The evidence on the subject of Biology is to be found in part under the head of "Buildings, Etc."

The further evidence is as follows :—

1. November 8th, 1890. Letter from Professor Wright to the registrar, stating that he assumes that his request for information as to the most pressing requirements refers only to the Faculty of Arts; and on that assumption replies by pointing out the division of the work thus :—

(1.) General biology.

(2.) Animal morphology.

(3.) Animal physiology.

(4.) Vegetable morphology.

(5.) Vegetable physiology.

That (1) and (2) are provided by himself, and (3) by Dr. MacCallum, the lecturer ; but there is no provision for botanical teaching more advanced than that contained in Number 1.

That the changes in circumstances include more practical work and the use of five afternoons in each week by the elementary first and second year classes, that the Fellow's time is fully engrossed, and the professor has himself to give much more time than before to those classes.

That therefore increased provision should be made for the teaching of botany in the university.

That in American universities of no greater importance than Toronto, a separate teacher is provided for vegetable physiology, apart from morphology and systematic botany; but that he would suggest that in the first instance a single teacher, well trained in modern laboratory methods in both aspects of botany, would suffice for present requirements.

That he has left out of consideration for the present the more effectual teaching of General biology as a pass subject, believing that the want indicated above is the more pressing.

2. The report of the committee of the Senate to which was referred the case of Dr. Macallum, lecturer in Physiology, to the effect that the subject taught by Dr. Macallum is not in any such sense subordinate to Biology as to make it improper and unnecessary that this subject should be represented in the Council of the University and that there would be positive advantage in having it independently represented.

3. The report of the committee as amended by the Senate, expressing the opinion that Physiology should be represented in the Council.

Dr. Macallum by letter dated 10th February observes, referring to the remarks he makes on memorial A. 7, (which see), as follows:—

*a.* Professor Wright has already urged the appointment of a lecturer in botany. He also urges this. More so because the Fellow should not perform the large amount of work now imposed on him by reason of the smallness of the staff. It leaves him hardly any time for private work and study as contemplated in the creation of fellowships. That view of the fellowship has been apparently abandoned, but no one has countenanced as much as twenty hours work per week or a Fellow, yet without a change this is necessary.

*b.* He knows that many of the departments are asking for increases in staff. his causes him to modify proposals of his own, and would have prevented him om writing, but that silence now would lead to the belief that the department satisfied with the situation, and that the staff is sufficient for the very large mount of work it has to perform.

*Recommendation.*

The following recommendation is made:—

Second order of urgency—

The appointment of a lecturer in botany.

In the absence of Professor Ramsay Wright, it has been impossible to obtain his views on the less urgent requirements of his department; and it is suggested that on his return a statement be procured from him for reference when the deferred claims come to be considered.

---

## Political Science.

The evidence on this subject is as follows:—

1. Professor Ashley, by letter of 23rd January, refers the committee, on the question of further assistance in the legal branch to the professors in that branch. He points out that the present arrangement can only be a temporary one, and

that soon either an additional lecturer must be appointed for one of the three subjects now assigned to Professor Proudfoot, or some arrangement must be made by which Professor Proudfoot can give greater assistance in the English law;

2. Professor Ashley in answer to the committee, suggests as desirable additions to this department—

(*a*) Within a couple of years a short elementary course of lectures on Commercial law.

Mr. Lash has delivered four lectures in each of the last two years; the men are very grateful.

The subject has no distinct place on the curriculum; nor perhaps would it be desirable that it should ever be compulsory for any arts student.

But it would very suitably form part of a short commercial course, should such be instituted as in Dalhousie and some other universities.

Professor Ashley is now considering in conference with bankers, how the University may be placed more closely in contact with the commercial professions, especially banking; and this would probably be an important element of any scheme.

For $500 probably, some distinguished lawyer might give a course of fifteen lectures which would suffice.

(*b*) In four or five years time it will be expedient to create a lectureship in Constitutional history with special regard to Canada and the United States.

The fields of Economics and Finance are wide enough for one professor, and though a Fellow has recently been appointed with reference to constitutional history, yet in the time named the situation will be ripe for the appointment of a lecturer, beginning at $1,000.

*Recommendation.*

It is recommended that the consideration of this branch be postponed.

---

ORIENTAL LANGUAGES.

The evidence on this head is as follows:—

1. Professor McCurdy, by letter of 21st February, 1891, states that:

(1) It seems absolutely necessary that he should have some assistance.

It is not so much a question whether he should be relieved from excessive toil, as whether the work can be properly carried on. At present he has to lecture three or four hours a day; and even when thus going to the utmost limits of his capacity is compelled to slight some of the classes and certain parts of the work.

(2) He thinks, in fairness, his salary should be raised without delay to a living standard. Since 1888 he has been serving as full professor on an allowance of but $2,000 a year. This is $500 less than the recognized minimum, and that minimum is received by only one member of the staff. He has, especially of late, felt this discrimination to be extremely unjust and oppressive.

(3) The number of students is now over 70; much beyond any previous year.

The Toronto Oriental course is unique among all the universities of the English-speaking world; and the whole work, especially in the training of specialists, is most promising in spite of its disabilities.

He refers for further information to Principals Caven and Sheraton.

2. Professor McCurdy on 11th April makes a further representation as follows:

I. As to the need of tutorial help—

The friends of the department have always recognized that the students of Oriental languages stand in special need of tutoring or drilling, mainly because of the peculiar difficulties which the snbject offers to beginners.

The following scheme with the accompanying observations may serve to shew what has been aimed at in the lecturing and teaching, and what we have been able thus far to secure:

| Year. | I. Necessary Pass Honor. | | II. Desirable Pass Honor. | | III. Actual Pass Honor. | |
|---|---|---|---|---|---|---|
| I. | 3 | | 3 | 2 | 3 | |
| II. | 2 | 4 | 3 | 4 | 2 | 3 |
| III. | 2 | 4 | 2 | 5 | 1 | 3 |
| IV. | 1 | 5 | 1 | 6 | 1 | 4 |
| | 21 | | 26 | | 17 | |

"Oriental Literature" was made a graduating department in 1886. In 1888 I was made full professor with the sole charge of the work. At that time there were no honor students in the fourth year, as the honor work does not begin till the second year of the University course. I was therefore able in the session 1888-9 to fulfil all the duties without inconvenience, according to scale No. III. above. But I have found the work of the two following sessions exceedingly onerous, and in fact I have had to do injustice to some of my classes, so far as to rob a number of my men of the time and service which I felt I owed them. The failure to render their course complete and thorough I shall never cease to regret, and it has formed the bitterest personal experience of my University life in Toronto. The pass men of the fourth year and the honor classes of both third and fourth years have had particularly to suffer in this way. To the lower classes and to the pass men in general, who, I think, especially need sympathy and encouragement, I felt that I ought to give the most and best of my time.

Even this minimum scale of seventeen hours weekly cannot therefore be continued during next season, unless I am to have some assistance in teaching. But seventeen hours weekly is inadequate to fulfil the requirements of the course as scale No. I. is intended to indicate. Since the curriculum of 1890-95 has been introduced, the insufficiency of the present time schedule has become more than ever apparent. Only the appointment, according to the terms of the Act, of a lecturer in addition to the professor, will furnish the teaching force necessary. The assistance that would be given by a Fellow would, however, in the meanwhile make the department at least workable.

It should be added that a weekly seminary, in the work of which the more advanced students can take some independent share, is also, in my view, indis-

pensable; especially as post-graduate students, whose claims are not otherwise at present deferred to, can thereby be materially forwarded in their studies. Such a seminary was held during the present session for several months, and was found to be very profitable. For this exercise one hour has to be added to each of the above totals.

I may say, further, that at the time of my appointment as professor in 1888, I stated to the authorities (in answer to a question by Mr. Mowat) that I expected to need the services of a Fellow after two years, as a consequence of the development of the work.

II. As to my claim for an increase of salary, I would adduce the following facts:—

In the arts faculty there are (excluding the President):—

8 professors receiving $3,000 or over;

1 professor receiving $2,500, with board, etc., as Dean;

1 professor receiving $2,000.

This disproportion in one single case has seemed to me inexplicable except on one or the other of the following suppositions; either that the department, in spite of its being considered worthy of an independent place as a graduating department, is not deemed to be of sufficient importance to be honored with a regular professor's allowance; or that the incumbent is considered so conspicuously inferior to his colleagues in academical qualities as not to be worthy of a living maintenance. This conclusion has been forced upon me, particularly, by the circumstance that no relief has been afforded to me in spite of the assurances of the Minister made to me repeatedly within the last two years, that my salary would be raised as soon as funds were available for such purposes, while the department of Philosophy has within that period had an additional professor appointed, and the professor of Political science, whose appointment was almost coincident with my own, and whose salary was fixed at $2,500, has had his allowance raised to $3,000, and has received besides the assistance of a Fellow. The grievousness of this discrimination may be seen to be aggravated by the circumstance that in neither of the two departments just named is any work required of first year men, and the total number of hours of teaching is in neither of them nearly equal to that imperatively demanded by the Oriental course. The effect of this whole system of disfavor was to make me feel so handicapped, squeezed and humiliated, that it was at the earnest solicitation of Drs. Caven and Sheraton alone that I refrained from resigning my position last November.

The combined influence of excessive toil and inadequate remuneration has been to seriously cripple my efforts to serve the University and the world duly and worthily. The engrossment of my time with work in and for the class-room, and the necessity of using my pen for the purpose of increasing my income, have prevented me from completing and publishing text-books desirable for my own classes, and especially an extensive work by which I had hoped that Biblical and Oriental science would be somewhat advanced. I do not hold my department to be the most important of all branches of liberal or special culture, but I magnify my office in thinking that it may and ought to be occupied in promoting the glory of God and the enrichment of man's intellectual and moral estate.

The total number of students attending my classes on the Registrar's certificate during the present session was 82, classified according to years as follows:—

| | | |
|---|---|---|
| I | 49 | |
| II | 23 | (including 4 in honors.) |
| III | 4 | (including 1 in honors.) |
| IV | 6 | (including 2 in honors.) |

The small number appearing in the third and fourth years is to be accounted for by the fact that this was the first session in which Hebrew options were granted pass men in these years. Most of the students are naturally looking forward to a theological course, but the ablest pupil I have had (the Governor-General's gold medallist of last year) is devoting himself to Oriental studies as his specialty for their own sake; and one of my first year students this session was a lady.

Not only is the number of students increasing, but their interest in their studies is also growing, and their progress every year more marked. The future of the department is full of promise if the work can be efficiently carried on.

Finally, I may be allowed to say, that there is, so far as I know, no other University in the English-speaking world, except Oxford and Cambridge, where Oriental Literature ranks as an undergraduate subject with other branches of general culture. Nor am I aware that there is any other arts college in Great Britain or America where the number of Semitic students, including both graduates and undergraduates, is nearly so large as in the University of Toronto. Yet, to speak of American institutions alone, Harvard has two full professors in this department, Yale one professor with several assistants, the University of Pennsylvania three professors and Johns Hopkins one professor, an "associate" (or lecturer) and a Fellow.

3. Principal Caven and Principal Sheraton on 13th April, state as follows:—

We would respectively press upon your earnest consideration the claims of the department of Orientals, both because of its vital importance to the work of the Theological Colleges and because of the very prominent position in recent years accorded to the investigations and studies in this department, in relation to historical and philological research.

We are strongly of the opinion that this department ought to be placed upon the same level as other departments devoted to linguistic and philological study. It is entitled to this recognition both on account of its own intrinsic importance, and on account of the character and value of the work actually carried on. Until quite recently it was placed in a markedly inferior position both as to the status and emoluments of the head of the department, and the place assigned the work in the curriculum. A partial recognition has at length been accorded, but we would respectfully urge that as soon as the resources of the University and the necessities of the various departments permit, its status, both as to the emoluments and the strength of the teaching body, should be placed more upon an equality with similar departments, and its place in the curriculum side by side with other language departments fully recognized.

Students in Orientals in the earlier years of their course require very much tutorial assistance, without which we do not think that in ordinary cases satisfactory progress can be made. The professor cannot possibly give such continuous supervision as is necessary, especially for the pass men. We would therefore represent the desirability of establishing at an early date a fellowship in Orientals, similar to the fellowships in Classics and in Moderns.

*Recommendation.*

The following recommendation is made.

First order of urgency: the temporary appointment of a Fellow pending the appointment of a lecturer.

Second order of urgency: the appointment of a lecturer.

---

LIBRARIAN.

Reference to "A" Modern Languages under the head of German, will show that from a departmental point of view the appointment of a librarian is in the first order of urgency.

This appointment is also in the same order in view of the condition of the library.

The books are now being collected and catalogued, and the whole time of a competent man is required; under the new system the library will be much more largely used than before, and its usefulness will greatly depend on the knowledge and efficiency of the librarian, who should grow up with the library.

It is recommended that a librarian be appointed.

---

GENERAL RESULT OF RECOMMENDATIONS.

The general result of these recommendations, grouped in the order of urgency, is as follows:—

*First Order of Urgency.*

| | Minimum initial salary |
|---|---|
| French, temporary lecturer | $800 |
| German (transfer of entire services of present lecturer from library to German, cost charged to German) | 1,000 |
| German, temporary lecturer | 800 |
| Italian and Spanish, fellow | 500 |
| Latin, temporary lecturer | 800 |
| Latin, assignment of half fellow, Greek and Latin | 250 |
| Physics, assistant demonstrator | 700 |
| Mathematics, fellow | 500 |
| Chemistry, provision for yearly increase to demonstrator | 100 |
| Oriental languages, temporary fellow | 500 |
| Librarian (necessary in order to transfer of lecturer to German, cost charged to German) | 1,200 |
| Total | $7,150 |

*Second Order of Urgency.*

| | Minimum initial salary. |
|---|---|
| French, professor | $2,500 |
| German " | 2,500 |
| Latin " | 2,500 |
| Greek, fellow | 500 |
| English " | 500 |
| Physics, lecturer | 800 |
| Biology " | 800 |
| Oriental languages, lecturer | 800 |
| Total | $10,900 |

But from this is to be deducted the relief from the salaries, to be obtained by these appointments.

The minimum relief, even assuming the appointments to be all made during the next financial year, will be as follows:—

| | |
|---|---|
| French, temporary lecturer | $900 |
| German " " | 900 |
| Latin " " | 900 |
| Oriental languages, temporary fellow | 500 |
| Total | $3,200 |

Thus reducing the total addition of charge in the second order of urgency to $7,700.

But it may be thought expedient by the Executive, either with a view to earlier action than the condition of the funds will otherwise allow, or from other considerations affecting the filling of the chairs, to appoint in one or more cases to associate professorships.

In case any of the chairs are so filled, the balance of $7,700 will be further reduced by the difference of salary between a professor and an associate professor, being $700 for each chair so filled, making a further possible reduction in charge of $2,100, which would bring down the initial charge to $5,600.

And in case it is thought expedient by the Executive to appoint any present lecturer to a chair, the balance would be reduced by the difference between the salary of such lecturer and that of the temporary lecturer, making at present $700 for each chair so filled.

*Third Order of Urgency.*

| | Minimum initial salary. |
|---|---|
| Italian and Spanish, professor | $2,500 |

PROBABLE TIME FOR ACTION.

These figures show the probability that our finances will admit of the cases in the first order of urgency, including therein the establishment of the retirement fund, being dealt with during the next financial year; and of the remainder being disposed of perhaps in part during the same year, and at any rate soon after.

DEFERRED CLAIMS.

It is proposed that the deferred claims should be taken up and dealt with comprehensively as soon as the condition of the finances gives a prospect of their being met.

CLERKS, ASSISTANTS AND SERVANTS.

It is recommended that these cases, which are not numerous or comparatively important to the University, but which are of consequence to the individuals, and should be regulated, be taken up by the authorities for inquiry and action; as they are not conceived to fall within the scope of this reference.

The whole unanimously adopted.

(Sgd.) EDWARD BLAKE,
Chairman.

UNIVERSITY OF TORONTO,
April 13th, 1891.

# UNIVERSITY OF TORONTO.

The Bursar's Statements of Cash Transactions for Year ending 30th June, 1890.

Presented to the Legislative Assembly,

By Command,

J. M. GIBSON,
*Secretary.*

Provincial Secretary's Office,
Toronto, 5th January, 1891.

## UNIVERSITY OF TORONTO.

Statement shewing Investments and Income derivable therefrom as at 30th June, 1890.

| | | Investments. | Income. |
|---|---|---|---|
| | | $ cts. | $ cts. |
| Debentures: | | | |
| $ 2,433 33 @ 4 per cent | 97 32 | | |
| 171,279 51 @ 5 " | 8563 95 | | |
| 14,000 00 @ 5½ " | 770 00 | | |
| 211,891 90 @ 6 " | 12723 52 | | |
| | | 399604 74 | 22154 79 |
| 1st Mortgages on real estate | | 562181 00 | 33730 00 |
| Balances—Sales of land | | 14887 82 | 893 28 |
| Rents | | | |
| Income | 3275 00 | 28000 00 | |
| Less Interest on mortgage on York street property | 600 00 | | |
| | | | 2675 00 |
| Bank of Commerce stock | | 350 00 | 24 50 |
| Rents University Park | | | 8474 00 |
| City of Toronto grant | | | 6000 00 |
| | | | 73851 57 |
| Fees, say | | | 17500 00 |
| | | | $91351 57 |

J. E. BERKELEY SMITH,
*Bursar.*

Bursar's Office,
Toronto, July, 1890.

## STATEMENT No. 1.

### University of Toronto.

The Bursar's Statement of Receipts and Disbursements on Capital Account for the year ending 30th June, 1890.

| Receipts. | | $ c. | Disbursements. | $ c. |
|---|---|---|---|---|
| Purchase money—sales of land | | 1493 42 | Balance 30th June, 1889 | 29256 22 |
| Loans repaid | | 63300 91 | Invested in loans, first mortgage, Real Estate | 36561 02 |
| Debentures redeemed :— | | | Transferred to Prince's Prize Account | 900 00 |
| Mono | $10000 00 | | Invested in debentures—East Toronto | 14075 24 |
| East Luther | $ 45 29 | | Balance 30th June, 1890 | 41811 40 |
| do | 203 67 | | | |
| do | 130 99 | | | |
| | 379 95 | | | |
| Parkdale | 3000 00 | | | |
| East Sandwich | $115 04 | | | |
| do | 356 43 | | | |
| do | 229 49 | | | |
| do | 110 30 | | | |
| | 811 26 | | | |
| Sandwich | 354 00 | | | |
| Port Elgin | 199 75 | | | |
| Caledon | 500 00 | | | |
| Rochester | $166 07 | | | |
| do | 155 66 | | | |
| do | 122 05 | | | |
| | 453 78 | | | |
| Townsend | 1500 00 | | | |
| Drayton | 204 54 | | | |
| Bruce | 23000 00 | | | |
| Burpee | 1000 00 | | | |
| Nottawasaga | $ 31 74 | | | |
| do | 168 40 | | | |
| | 200 14 | | | |
| Petrolia | 1298 38 | | | |
| Ellice | 674 00 | | | |
| Elgin | 2996 25 | | | |
| Haldimand | 997 50 | | | |
| Peterborough | 1000 00 | | | |
| Meaford | 240 00 | | | |
| | | 57809 55 | | |
| | | 122603 88 | | 122603 88 |

J. E. BERKELEY SMITH,
*Bursar.*

Bursar's Office,
Toronto, July, 1890.

## No. 2.—UNIVERSITY OF TORONTO.

The Bursar's Statement of Receipts and Disbursements on account of the Income Fund for the year ending 30th June, 1890.

| Receipts. | $ c. | To Whom Paid. | Service. | $ c. | $ c. | $ c. |
|---|---|---|---|---|---|---|
| | | | Bursar's Office—Salaries:— | | | |
| Balance, 30th June, 1889:— | | J. E. Berkeley Smith .. | Bursar, 12 months' salary ... ..... | 2200 00 | | |
| Income account .....Cr. 16000 25 | | Angus Mackenzie..... . | Clerk, 5 do ..... | 333 32 | | |
| Income appropriation..Dr. 12573 46 | | F. A. Moure ..... | do 12 do ..... | 350 00 | | |
| | 3426 79 | | | | 2883 32 | |
| Interest on purchase money ..... | 859 72 | | Stationery and Postage:— | | | |
| Interest on loans..... | 35757 92 | Rowsell & Hutchison ... | Stationery, etc ..... $11 85 | | | |
| Interest on debentures..... | 23710 87 | do .. | do ..... 9 18 | | | |
| Interest on bank balances..... ..... | 1070 01 | do ... | do ..... 34 75 | | | |
| Rents ..... ..... | 2861 20 | | | 85 78 | | |
| Rents—University Park. . ..... | 7800 92 | The Bursar..... | Petty disbursements for postage, etc... | 254 42 | | |
| Dividend on bank stock ..... | 24 50 | | | | 340 20 | |
| Pasturage ..... ..... ..... | 17 00 | | Incidentals: | | | |
| Fees—University and University College | 17515 81 | The Bursar..... | Fuel, light, attendance... ..... | 100 00 | | |
| Grant—City of Toronto. ..... | 6000 00 | W. Beers..... ... | Repairing windows..... $5 94 | | | |
| Prince's Prize—amount of account closed. | 105 83 | do .. ..... ... | Repairs, etc ..... ..... 4 41 | | | |
| Insurance *re* mortgages ..... ... | 108 38 | | | 10 35 | | |
| Transfer fees. ..... | 64 00 | W. Hallarn ..... | Stove pipes, etc ..... | 7 26 | | |
| | | Arthur Worth. ..... | Assistance ..... ..... | 130 00 | | |
| | | Ernest Wood ..... | " 5 months ..... | 30 00 | | |
| | | R. Walker & Sons. .. | Linoleum and carpet..... .. ..... | 41 19 | | |
| | | Chas. Rogers, Sons & Co. | Chairs ..... ..... .. ..... | 31 50 | | |
| | | Chas. E. Goad ..... | Atlas ..... ..... | 27 50 | | |
| | | Edwin Merritt ..... | Paper hanging ..... ..... | 57 98 | | |
| | | Aikenhead & Crombie .. | Deed box .... ..... ... | 7 50 | | |
| | | Upper Canada College.. | 12 months' rent, Bursar's office ..... | 400 00 | | |
| | | | | | 843 28 | |
| | | | General Incidentals: | | | 4066 80 |
| | | Joseph Jolly..... | Share of cost of fence between University grounds and Mr. Temple's lot. ..... | | 9 00 | |
| | | Geo. A. Goodwin ..... | Assisting Engineer, 15 days ..... .... ..... | | 10 00 | |
| | | Dr. E. A. C. Smith .... | Inspection *re* D. McAuley's loan ..... ... ..... | | 5 00 | |
| | | Chas. King ..... | do W. M. Lepard farm..... | 10 00 | | |
| | | do .... ..... | Inspection *re* Armstrong and *re* sale Hamwell property..... | 20 00 | | |
| | | do ..... | Inspection *re* J. W. Ross ..... $11 30 | | | |
| | | do ..... | do T. Durney . .... 5 00 | | | |
| | | do ..... | do J. Brown ..... 5 00 | | | |
| | | | | 21 30 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | do ..... | do Bidwell ..... | 14 00 | | |
| | | do ..... | do Durney ..... $23 00 | | | |
| | | do ..... | do Liedy ..... 10 00 | | | |
| | | | | 33 00 | | |
| | | | | | 98 30 | |
| | | Richard Ardagh ..... | Donation, Firemen's Benefit Fund ..... | | 100 00 | |
| | | Treasurer, City of Toronto ..... | Simcoe Street sewer ..... | | 48 00 | |
| | | Wm. Box ..... | Inspection *re* Durney Farm ..... | | 10 00 | |
| | | Thomas Gordon ..... | " " ..... | | 8 35 | |
| | | H. B. Fraser ..... | Allowed for extra expenses *re* Y.M.C.A. Building ..... | | 6 00 | |
| | | | | | 294 65 | |
| | | | Less amount returned *re* D. S. Armstrong, $5; *re* Liedy, $10; J. W. Ross, $10; W. M. Lepard, $10 .... | | 35 00 | |
| | | | | | | 259 65 |
| | | | Law Costs:— | | | |
| | | Wm. Macdonald ..... | *Re* Park and avenues ..... | 441 07 | | |
| | | do ..... | *Re* General costs ..... | 69 46 | | |
| | | do ..... | *Re* do ..... | 7 23 | | |
| | | | | | 517 76 | |
| | | | Less amounts returned ..... | | 29 31 | |
| | | | | | | 488 45 |
| | | | Salaries—University and College:— | | | |
| | | William Mulock, M.A. | Vice-Chancellor, 12 months' salary .... | 400 00 | | |
| | | D. B. Dick ..... | Architect, 12 months' salary .. | 100 00 | | |
| | | W. H. VanderSmissen | Librarian, 12 months' salary ..... | 1000 00 | | |
| | | H. H. Langton ..... | Registrar, 12 months' salary ..... | 1000 00 | | |
| | | James Brebner ..... | 1st Assistant in Library, 12 months salary ..... | 353 34 | | |
| | | J. A. Sinclair ..... | 2nd Assistant in Library ..... | 62 50 | | |
| | | Neil McDougall ..... | 3rd Assistant in Library, 4 months' salary ..... | 40 00 | | |
| | | J. H. Moss ..... | Registrar's Assistant, 12 months' salary | 200 00 | | |
| | | R. McKim ..... | Beadle and Messenger to Senate, 12 months' salary ..... | 700 00 | | |
| | | T. Eversfield ..... | Engineer, 12 months' salary ..... | 576 00 | | |
| | | A. Pride ..... | Sub-Curator of Museum, 12 months' salary ..... | 524 00 | | |
| | | John S. Plaskett ..... | Mechanical Assistant to Professor of Natural History, 6 months' salary. | 350 00 | | |
| | | Sir Daniel Wilson, LL.D. | President and Professor of History, etc., 12 months' salary ..... | 4200 00 | | |
| | | W. H. Pike, PhD ..... | Professor of Chemistry, 12 months salary | 3100 00 | | |
| *Carried forward* ..... | 99322 98 | | *Carried forward* ..... | ..... | ..... | ..... |

No. 2.—UNIVERSITY OF TORONTO.—*Continued.*

| Receipts. | $ c. | To Whom Paid. | Service. | $ c. | $ c. | $ c |
|---|---|---|---|---|---|---|
| *Brought forward* | 99322 98 | | *Brought forward* | | | |
| | | | Salaries—University and College—*Con.* | | | |
| | | M. Hutton, M.A. | Professor of Greek, 12 months' salary | 3100 00 | | |
| | | E. J. Chapman, Ph.D. | Professor of Mineralogy and Geology, 12 months' salary | 3100 00 | | |
| | | R. Ramsay Wright, M.A | Professor of Natural History and Botany, 12 months' salary | 3100 00 | | |
| | | James Loudon, M.A. | Professor of Natural Philosophy, 12 months' salary | 3100 00 | | |
| | | J. M. Baldwin, M.A., Ph.D | Professor of Logic and Metaphysics, 9 months' salary | 2250 00 | | |
| | | W. J. Alexander, M.A. | Professor of English Literature, 10 months' salary | 2500 00 | | |
| | | Alfred Baker, M.A. | Professor of Mathematics and Dean of Residence, 12 months' salary | 2500 00 | | |
| | | W. J. Ashley, M.A. | Professor of Political Science, 12 months' salary | 2500 00 | | |
| | | J. F. McCurdy, Ph.D. | Professor of Oriental Literature, 12 months' salary | 2000 00 | | |
| | | W. J. Loudon, M.A. | Demonstrator of Physics, 12 months' salary | 1500 00 | | |
| | | D. R. Keys, M.A | Lecturer on English, 12 months' salary. | 1500 00 | | |
| | | J. Squair, M.A. | " French, 12 months' salary. | 1500 00 | | |
| | | H. R. Fairclough, B.A. | " Greek, 12 months' salary | 1500 00 | | |
| | | W. H. Fraser, B.A | Lecturer on Italian and Spanish, 12 months' salary | 1500 00 | | |
| | | A. B. McCallum, B.A. | Lecturer on Physiology, 12 months' salary | 1500 00 | | |
| | | W. H. VanderSmissen, M.A | Lecturer on German, 12 month's salary | 1000 00 | | |
| | | W. Dale, M.A. | Lecturer on Latin, 12 months' salary | 1500 00 | | |
| | | J. G. Hume | Professor of History, of Philosophy, and Ethics, allowance | 500 00 | | |
| | | Hon. David Mills, LL.B. | Lecturer on Constitutional and International Law, allowance | 1000 00 | | |
| | | John Hare | Attendant, retiring bonus and 8 months' salary | 586 00 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | Joseph Durance | Janitor, arrears and 12 months' salary | 489 00 | | |
| | | James Thompson | Attendant on Lavatory, 11 months' salary | 88 00 | | |
| | | W. E. Boustead | Assistant to Professor of Chemistry (on account of allowance) | 50 00 | | |
| | | A. P. Saunders | Chemical Lecture Assistant, 6 months' salary | 150 00 | | |
| | | R. H. Bullen | Attendant, 6 months' salary | 210 00 | | |
| | | Thomas Bottomley | Attendant on Professor of Chemistry | 84 00 | | |
| | | G. A. H. Fraser, B.A. | Fellow, allowance | 500 00 | | |
| | | J. McGowan, B.A. | do | 656 25 | | |
| | | J. G. Witton, B.A. | do | 187 50 | | |
| | | A. F. Chamberlain, M.A. | do | 500 00 | | |
| | | G. Chambers, B.A., M.B. | do | 500 00 | | |
| | | J. J. Mackenzie, B.A. | do | 500 00 | | |
| | | F. G. Wait, M.A. | do | 312 50 | | |
| | | F. Tracy, B.A. | do | 500 00 | | |
| | | W. F. Seymour | do | 52 09 | | |
| | | C. A. Chant | do | 52 08 | | |
| | | H. R. Moore | do | 52 08 | | 55225 34 |
| | | | Scholarships:— | | | |
| | | W. E. Woodruff | Allowance, Blake scholarship | 75 00 | | |
| | | T. B. P. Stewart | do | 25 00 | | |
| | | A. T. Thompson | do | 100 00 | | |
| | | C. A. Stewart | Allowance, Blake ($50) & W. Mulock ($60) scholarship | 110 00 | | |
| | | T. W. Shipley | Allowance, Moss scholarship | 120 00 | | |
| | | R. S. Jenkins | do Mary Mulock do | 120 00 | | |
| | | R. Henderson | do W. Mulock do | 60 00 | | |
| | | Miss F. V. Keys | do George Brown do | 60 00 | | |
| | | W. H. Jenkins | do Sir Daniel Wilson do | 60 00 | | |
| | | A. J. Hunter | do do do | 60 00 | | 790 00 |
| | | | Examiners:— | | | |
| | | John Muir | Fee as Examiner | 102 50 | | |
| | | W. F. Walker | do | 60 00 | | |
| | | J. F. Fotheringham | do | 28 00 | | |
| | | T. Mulvey | do | 20 50 | | |
| | | Rev. G. C. Workman | do | 26 50 | | |
| | | J. J. Mackenzie | do | 208 50 | | |
| | | A. McGill | do Expense, $20.00, $24.45 | 44 45 | | |
| | | Rev. F. H. Wallace | do | 175 00 | | |
| | | G. H. Robinson | do | 160 00 | | |
| | | H. R. Fairclough | do | 160 00 | | |
| | | Prof. A. R. Bain | do | 188 77 | | |
| | | J. McGowan | do | 169 35 | | |
| *Carried forward* | 99322 98 | | *Carried forward* | | | |

No. 2.—UNIVERSITY OF TORONTO.—*Continued.*

| Receipts. | $ c. | To Whom Paid. | Service. | $ c. | $ c. | $ c. |
|---|---|---|---|---|---|---|
| *Brought forward* | 99322 98 | | *Brought forward* | | | |
| | | | Examiners—*Continued.* | | | |
| | | W. H. Ballard | Fee as Examiner | 174 87 | | |
| | | D. R. Keys | do | 300 00 | | |
| | | H. H. Dewart | do | 220 00 | | |
| | | F. A. Haltain | do | 80 00 | | |
| | | Prof. A. H. Raynar | do | 196 00 | | |
| | | W. H. Fraser | do | 162 00 | | |
| | | F. B. Richard | do | 80 00 | | |
| | | A. F. Chamberlain | do | 164 00 | | |
| | | John Galt | do | 20 00 | | |
| | | Daniel Hull | do | 14 00 | | |
| | | Alex. Marling | To pay Examiners in Matriculation Examination | 316 00 | | |
| | | F. T. Shutt | Fee as Examiner | 20 00 | | |
| | | J. Fletcher | do | 20 00 | | |
| | | Dr. A. P. Coleman | do | 52 55 | | |
| | | Dr. R. C. Kedgie | do | 20 00 | | |
| | | Dr. H. P. Armsby | do | 20 00 | | |
| | | Prof. C. C. James | do | 20 00 | | |
| | | J. A. W. Robertson | do | 20 00 | | |
| | | S. C. Smoke | do | 20 00 | | |
| | | J. P. Roberts | do | 20 00 | | |
| | | Dr. J. J. Hare | do | 20 00 | | |
| | | J. G. Roberts, D.D.S. | do | 46 50 | | |
| | | R. M Fisher | do | 52 50 | | |
| | | L. Teskey, M.D. | do | 40 00 | | |
| | | G. A. Peters, M.B | do | 20 00 | | |
| | | T. F. McMahon, M.B | do | 20 00 | | |
| | | W. T. Stewart, M.B. | do | 20 00 | | |
| | | A. B. McCallum, Ph.D | do | 26 00 | | |
| | | H. A. McCallum, M.B. | do | 72 20 | | |
| | | H. S. Griffin, M.D | do | 40 00 | | |
| | | A. M. Baines, M.D | do | 20 00 | | |
| | | F. W. Strange, M.D. | do | 40 00 | | |
| | | C. O'Rielly, M.D | do | 40 00 | | |
| | | G. Chambers, M.D | do | 140 00 | | |
| | | G. A. Swann, D.D.S. | do | 47 20 | | |
| | | J. H. Collins, M.D | do | 10 00 | | |

| | | | | |
|---|---|---|---|---|
| H. W. Armstrong, M.D. | do | | 10 00 | |
| H. A. Yeoman, M.D | do | | 10 00 | |
| Hon. Wm. Proudfoot | do | | 60 00 | |
| Hon. David Mills | do | | 60 00 | |
| Prof. J. W. Ashley, M.A. | do | | 20 00 | |
| G. A. H. Fraser | do | | 30 00 | |
| J. H. Moss | do | | 28 00 | |
| R. McArthur | do | | 29 00 | |
| J. Squair | do | | 80 00 | |
| J. M. Duncan | do | | 80 00 | |
| A. J. Bell | do | | 85 00 | |
| J. H. McGeary | do | | 62 25 | |
| F. G Watt | do | | 110 10 | |
| W. Dale, M.A. | do | | 80 00 | |
| H. E. A. Reid | do | | 60 00 | |
| Prof. J. M. Baldwin | do | | 20 00 | |
| A. C. Mackay | do | | 80 00 | |
| J. E. Martin | do | | 114 92 | |
| Prof. M. Hutton | do | | 80 00 | |
| W. P. Mustard | do | | 83 00 | |
| Prof. W. J. Alexander | do | | 80 00 | |
| W. J. Robertson | do | | 87 00 | |
| Rev. J. F. McCurdy | do | | 40 00 | |
| E. C. Jeffrey | do | | 97 00 | |
| W. N. Miller, Q.C. | do | | 40 00 | |
| W. H. VanderSmissen | do | | 80 00 | |
| J. M. Hirschfelder | do | | 40 00 | |
| A. Lang | Attendant in hall | | 18 00 | |
| W. Richardson | Attendance at Examinations | | 10 50 | |
| Wm. Johns | do | | 9 00 | |
| Thomas Wasson | do | | 99 50 | |
| C. Jordan | do | | 9 00 | |
| James Robertson | do | | 19 50 | |
| G. T. Pearce | do | | 22 50 | |
| Wm. Groth | do | | 24 00 | |
| John Hare | do | | 44 00 | 5839 66 |
| | Library : | | | |
| American Journal of Philosophy | Subscription | $3 00 | | |
| Academy of Natural Sciences (Philadelphia) | Subscription | 5 00 | | |
| Mass. Historical Society | Subscription | 3 25 | | |
| History Company | Bancroft's Works | 9 00 | | |
| | P.O. orders and draft | 50 | | |
| | | | 20 75 | |
| *Carried forward* | 99322 98 | *Carried forward* | | |

## No. 2.—UNIVERSITY OF TORONTO.—*Continued.*

| Receipts. | $ c. | To whom Paid. | Service. | $ c. | $ c. | $ c. |
|---|---|---|---|---|---|---|
| *Brough forward* | 99322 98 | | *Brought forward* | | | |
| | | | Library—*Continued.* | | | |
| | | C. Scribner & Sons | Books $3 25 | | | |
| | | American Association for Advancement of Science | do 1 30 | | | |
| | | American Journal of Mathematics | do 10 00 | | | |
| | | History Company | do 4 50 | | | |
| | | Ginn & Company | do 14 00 | | | |
| | | | P.O. orders 60 | | | |
| | | | | 33 92 | | |
| | | | | | 54 67 | |
| | | D. T. McAinsh | Books | | 24 60 | |
| | | D. Appleton & Co | do | | 5 00 | |
| | | Williamson & Co | do | 24 90 | | |
| | | do | do | 129 65 | | |
| | | | | | 154 55 | |
| | | Brown Bros | Binding | 37 40 | | |
| | | do | do | 118 50 | | |
| | | do | Pencils, pens, etc | 95 | | |
| | | do | Binding | 140 20 | | |
| | | | | | 297 05 | |
| | | Rowsell & Hutchison | Stamps and postcards | 16 25 | | |
| | | do | Stamps | 12 68 | | |
| | | do | Stationery and printing | 158 69 | | |
| | | | | | 187 62 | |
| | | H. Welter | Books | 41 00 | | |
| | | do | do | 48 14 | | |
| | | do | do | 392 54 | | |
| | | | | | 481 68 | |
| | | James Brebuer | Dusting, etc | | 50 00 | |
| | | Gauthier, Villars et fils | Books | 41 00 | | |
| | | do | do | 90 48 | | |
| | | | | | 131 48 | |
| | | R. Friedlander & Sohn | Books | 247 80 | | |
| | | do | do | 94 14 | | |
| | | do | do | 162 74 | | |
| | | | | | 504 68 | |
| | | E. G. Allen | Books | 355 40 | | |
| | | do | do | 595 88 | | |
| | | | | | 951 28 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | John Britnell | Books | $5 00 | | | |
| | | | | 1 75 | | | |
| | | | | | 6 75 | | |
| | | do | do | | 52 35 | | |
| | | | | | | 59 10 | |
| | | W. H. VanderSmissen | Petty disbursements | $188 82 | | | |
| | | | | 187 71 | | | |
| | | | | | | 376 53 | |
| | | Rev. H. Symonds | Books | | | 33 50 | |
| | | *Publisher's Weekly* | Subscription, $13 50 Cost of P.O. order, 20c | | | 13 70 | |
| | | G. P. Putnam & Sons | Books 71 68 do 80 | | 72 48 | | |
| | | do | do 12 65 do 20 | | 12 85 | | |
| | | | | | | 85 33 | |
| | | Modern Language Notes | Subscription 1 50 do 10 | | | 1 60 | |
| | | Library Bureau | " 5 00 do 10 | | | 5 10 | |
| | | Harper Bros | " 4 95 do 10 | | | 5 05 | |
| | | Ginn & Co | Books 19 84 do 20 | | | 20 04 | |
| | | Quarterly Journal of Economics (Geo. H. Ellis) | Subscription 2 00 do 10 | | | 2 10 | |
| | | American Journal of Philosophy | " 3 00 do 10 | | | 3 10 | |
| | | American Economic Association | " 21 00 do 30 | | | 21 30 | |
| | | Leonard Scott Publishing Co | " 58 00 do 60 | | | 58 60 | |
| | | The J. E. Bryant Co | Books | | | 7 00 | |
| | | Rice, Lewis & Son | Nail puller | | | 2 50 | |
| | | Presbyterian News Co | Books | | | 50 00 | |
| | | Wm. Simpson | Shelving | | | 79 65 | |
| | | Rolph, Smith & Co | Printing | | | 70 50 | |
| | | Fletcher Mnfg. Co | Book supports | | | 4 60 | |
| | | Gsellius'sche Buchhandlung | Books | | | 24 70 | |
| | | | Less amount transferred to Library Restoration Fund | | | 3766 61 | |
| | | | | | | 1000 00 | 2766 61 |
| | | | Building and Grounds:— | | | | |
| | | J. L. Hicks | Repairing doors | | | 18 10 | |
| | | Fletcher Mnfg. Co | Tinware | | 27 23 | | |
| | | do | Lawn mowers, etc | | 20 53 | | |
| | | do | Brushes, tinware, etc | | 48 57 | | |
| | | do | Ink fillers, brushes, etc | | 17 00 | | |
| | | | | | | 113 33 | |
| | | W. J. McGuire & Co | Radiator, etc., new room Prof. Political Science, $54.00; cloak room, $34.00 | | 88 00 | | |
| | | do | Repairs, steam heating, gas, etc | | 138 32 | | |
| | | | | | | 226 32 | |
| *Carried forward* | 99322 98 | | *Carried forward* | | | | |

No. 2.—UNIVERSITY OF TORONTO.—*Continued.*

| Receipts. | $ c. | To Whom Paid. | Service. | $ c. | $ c. | $ c. |
|---|---|---|---|---|---|---|
| *Brought forward* | 99322 98 | | *Brought forward* | | | |
| | | | Building and Grounds—*Continued.* | | | |
| | | Wm. Simpson | Repairs at Convocation Hall | 50 79 | | |
| | | do | Repairs | 18 90 | | |
| | | do | Carpenter work | 83 51 | | |
| | | do | do | 48 82 | | |
| | | do | do | 38 45 | | |
| | | do | Students' tables, etc | 85 75 | | |
| | | | | | 326 22 | |
| | | John Inglis & Sons | Repairs to boilers | | 12 91 | |
| | | James Morrison | Repairing valves for boilers | 22 62 | | |
| | | do | Sheet rubber | 1 77 | | |
| | | | | | 24 39 | |
| | | Elliott & Son | Painting and glazing | 20 80 | | |
| | | do | Glazing and repairing | 35 10 | | |
| | | do | Painting and glazing | 23 31 | | |
| | | do | Reglazing, painting, etc | 51 99 | | |
| | | | | | 131 20 | |
| | | Thomas Lumb | Cleaning and relaying carpets | | 16 77 | |
| | | John Kay, Son & Co | Carpet | 7 02 | | |
| | | do | do | 38 68 | | |
| | | | | | 45 70 | |
| | | Douglas Bros | Repairs, galvanized iron work, etc | 60 70 | | |
| | | do | Repairing roof | 62 10 | | |
| | | do | Galvanized iron work | 38 61 | | |
| | | | | | 161 41 | |
| | | R. Simpson | Towels, etc | 14 32 | | |
| | | do | Towels, flannel, etc | 18 45 | | |
| | | | | | 32 77 | |
| | | George Pearsall | Sharpening lawn mower | | 3 40 | |
| | | Heintzman & Co | Hire of piano | | 3 00 | |
| | | R. Brown | Gravel | | 7 80 | |
| | | James Murray | Labor | | 3 75 | |
| | | Robert Rennie & Son | Cleaning snow off roof, Univ. Building | 10 56 | | |
| | | do | Repairing roof | 54 36 | | |
| | | do | do | 37 22 | | |
| | | do | do and cleaning snow | 19 80 | | |
| | | do | do | 67 42 | | |
| | | | | | 189 36 | |

| | | | | | |
|---|---|---|---|---|---|
| George Weir | Labor on grounds | 36 00 | | | |
| do | do | 39 00 | | | |
| do | do | 37 50 | | | |
| do | do | 7 50 | | | |
| do | do | 27 75 | | | |
| | | | | 147 75 | |
| George Neil | do | 3 75 | | | |
| do | Assistance in engine room | 8 25 | | | |
| do | Shovelling snow | 7 88 | | | |
| | | | | 19 88 | |
| George Hare | Labor on grounds, 12 months' wages | | | 420 00 | |
| Mrs. Laballister | Cleaning buildings, 12 months' wages | 312 00 | | | |
| do | Washing towels | 6 00 | | | |
| | | | | 318 00 | |
| Joseph Durance | Services as Sunday Constable | | | 25 00 | |
| George Hare | do | | | 25 00 | |
| Henry Eversfield | Running boiler at night | | | 18 75 | |
| George Lynn | Labor on grounds | 13 50 | | | |
| do | do | 39 00 | | | |
| do | do | 37 50 | | | |
| | | | | 90 00 | |
| E. M. Morphy, Sons & Co | Repairing clock | | | 2 00 | |
| John Douglas & Co | Blowers for grates | | | 13 50 | |
| Map and School Supply Co | Maps | | | 7 20 | |
| Chas. Rogers, Sons & Co | Chairs | 6 60 | | | |
| do | do | 65 25 | | | |
| | | | | 71 85 | |
| C. M. Richardson | Removing specimens | | | 5 50 | |
| Henry Tolchard | Soap, etc | | | 12 00 | |
| W. J. Hargrave | Labor on grounds | | | 7 50 | |
| Inglis & Hunter | Testing boilers | | | 3 50 | |
| | | | | | 2503 86 |
| | Stationery and Printing—University :— | | | | |
| Rowsell & Hutchison | Printing, stationery, stamps, etc | 369 77 | | | |
| do | Gold medal and case | 30 38 | | | |
| do | Printing | 484 56 | | | |
| do | do | 260 45 | | | |
| do | do | 1734 71 | | | |
| do | Stationery and stamps | 286 46 | | | |
| do | do | 486 28 | | | |
| | | | | 3652 61 | |
| | | | | | 3652 61 |
| *Carried forward* | | 99322 98 | *Carried forward* | | |

No. 2.—UNIVERSITY OF TORONTO.—*Continued.*

| Receipts. | $ c. | To Whom Paid. | Service. | $ c. | $ c. | $ c. |
|---|---|---|---|---|---|---|
| *Brought forward* | 99322 98 | | *Brought forward* | | | |
| | | | Stationery and Printing—University College:— | | | |
| | | Rowsell & Hutchison | Stationery, stamps, etc | 163 60 | | |
| | | do | do | 57 80 | | |
| | | do | do | 47 36 | | |
| | | | | | 268 76 | |
| | | R. L. Polk & Co | Toronto Directory | | 4 00 | |
| | | | | | | 272 76 |
| | | | Advertising—University:— | | | |
| | | Toronto *World* | Advertising commencement | | 2 50 | |
| | | *Mail* Printing Co | do | | 1 50 | |
| | | *Globe* Printing Co | do | | 3 00 | |
| | | *The Week* | Advertising *re* Chair of Logic and Metaphysics | | 6 00 | |
| | | *Mail* Printing Co | Advertising *re* Chair of Logic and Metaphysics | | 4 50 | |
| | | *Globe* Printing Co | Advertising *re* Chair of Logic and Metaphysics | | 4 50 | |
| | | *Popular Science Monthly* | | $5 00 | | |
| | | *The Nation* | | 3 60 | | |
| | | *The Herald* | | 2 00 | | |
| | | *The Athenæum* | | 3 00 | | |
| | | *American Notes and Queries* | | 1 00 | 14 60 | |
| | | | | | | 36 60 |
| | | | Advertising—University College:— | | | |
| | | The *Mail* Printing Co | Advertising applications, $1.50; board for students, $6.00 | | 7 50 | |
| | | The *Globe* Printing Co | Advertising, $2.25, and Board for students, $6.00 | | 8 25 | |
| | | The *World* Printing Co. | Advertising | | 1 50 | |
| | | The *Empire* Printing Co. | do | | 2 25 | |
| | | | | | | 19 50 |
| | | | Fuel:— | | | |
| | | Elias Rogers & Co | Coal and wood | 1839 90 | | |
| | | do | Coal for Y. M. C. A | 46 10 | | |
| | | do | Coal and wood | 22 25 | | |
| | | do | do | 36 75 | | |
| | | | | | | 1945 00 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | Gas and water :— | | | | |
| Consumers' Gas Co .... | | Amount of account ..... | 19 29 | | | |
| do .... | | do ..... ..... | 8 83 | | | |
| do .... | | do ..... | 37 01 | | | |
| do .... | | do ..... ..... | 4 65 | | | |
| do .... | | do ..... ..... | 24 88 | | | |
| | | | | 94 66 | | |
| City Treasurer, Water-works Department... | | do ..... ..... | 97 83 | | | |
| City Treasurer, Water-works Department... | | do ..... | 6 50 | | | |
| City Treasurer, Water-works Department... | | do ..... ..... | 6 00 | | | |
| City Treasurer, Water-works Department... | | do ..... | 123 99 | | | |
| City Treasurer, Water-works Department.. | | do ..... | 217 46 | | | |
| City Treasurer, Water-works Department... | | do ..... | 8 80 | | | |
| | | | | 460 58 | | |
| | | | | | 555 24 | |
| | | Incidentals—University :— | | | | |
| W. T. Boyd..... | | Scrutineers at Senate election ..... ... | ..... | 35 00 | | |
| T. C. Milligan..... | | do ..... | ..... | 35 00 | | |
| Robert M. Williams.... | | Illuminated address to American Association for Advancement of Science | 4 00 | | | |
| do .. | | Engrossing Resolution of Condolence *re* Hon. J. Macdonald..... ..... | 4 50 | | | |
| | | | | 8 50 | | |
| H. H. Langton ..... | | Shelves for papers..... | ..... | 20 00 | | |
| H. R. Fairclough ..... | | Photographic apparatus to illustrate lecture..... | ..... | 15 53 | | |
| Robert M. Williams.... | | Engrossing Resolution to Julius Rossin | ..... | 4 00 | | |
| | | | | 118 03 | | |
| | | Less returned per R. McKim ..... | ..... | 1 50 | | |
| | | | | | 116 53 | |
| | | Incidentals—University College :— | | | | |
| Robert M. Williams.... | | Engrossing Resolution of Condolence *re* Hon. J. Macdonald ..... | ..... | 5 00 | | |
| C. A. Chant..... | | Reporting Senate proceedings to newspapers ..... | ..... | 60 00 | | |
| J. Taylor ..... | | Opening safe after fire ..... | ..... | 4 20 | | |
| | | | | | 69 20 | |
| | | Chemical Lecture Materials :— | | | | |
| James Iredale ... ..... | | Repairing gas burners ..... | 1 50 | | | |
| do ..... | | Brass work, etc ... ..... ... | 7 25 | | | |
| | | | | 8 75 | | |
| *Carried forward* ..... | 99322 98 | *Carried forward*..... | ..... | ..... | ... ..... | |

No. 2.—UNIVERSITY OF TORONTO.—*Continued.*

| Receipts. | $ c. | To Whom Paid. | Service. | $ c. | $ c. | $ c. |
|---|---|---|---|---|---|---|
| *Brought forward* ..... | 99322 98 | | *Brought forward* ..... | ..... | ..... | ..... |
| | | | Chemical Lecture Materials—*Continued.* | | | |
| | | Aikenhead & Crombie.. | Hardware ..... | 24 34 | | |
| | | do do .. | Emery grinder and vices ..... | 7 08 | | |
| | | | | | 31 42 | |
| | | Map & School Supply Co. | Crayons ..... | ..... | 1 08 | |
| | | | | | | 41 25 |
| | | | Chemical Laboratory Appropriation :— | | | |
| | | Dr. H. Geiesler..... | Apparatus ..... | ..... | 55 00 | |
| | | Robinson & Heath ..... | Freight and duty..... | ..... | 7 33 | |
| | | Prof. W. H. Pike. ..... | For freight..... | ..... | 4 40 | |
| | | R. Fuess..... | A cathetometer ..... | ..... | 12 30 | |
| | | | | | | 79 03 |
| | | | Physical Laboratory Maintenance :— | | | |
| | | Alex. Clark & Son..... | Carpenter work .... ..... | ..... | 69 06 | |
| | | Dr. Rudolph Kœnig.... | Microscope, etc..... | ..... | 125 00 | |
| | | R. H. Bullen..... .. | Ice, sal-ammonia, etc..... | ..... | 2 34 | |
| | | James Iredale .... .... | Copper work . ..... | ..... | 1 25 | |
| | | James Foster..... .... | Repairing plug..... | ..... | 1 25 | |
| | | Prof. J. Loudon..... | Freight and brokerage .. ..... | ..... | 18 14 | |
| | | Thomas Eversfield..... | Lamp and shade ..... ..... | ..... ..... | 3 00 | |
| | | Frame & Co ..... | Telegraph instrument..... | ..... | 8 00 | |
| | | Edison Mfg. Co..... | Insulated wire. ..... ..... | ..... | 2 36 | |
| | | G. Polhamus ..... | Cleaning polish..... | ..... ..... | 3 00 | |
| | | J. W. Queen & Co..... | Platinum wire, $10 00; P. O. order, 10c..... ... ..... | ..... | 10 10 | |
| | | | | | | 243 50 |
| | | | Biological Laboratory, Opening Expenses : | | | |
| | | Prof. R. R. Wright..... | Disbursements ..... .. | 200 50 | | |
| | | do ..... | " ..... ..... | 10 20 | | |
| | | | | | 210 70 | |
| | | R. J. Lloyd ..... | Catering ..... ..... | ..... | 75 00 | |
| | | | | | | 285 70 |
| | | | Covering Steam Pipes :— | | | |
| | | W. J. McGuire & Co ... | Covering steam pipes with felt..... | ..... | ..... | 351 00 |
| | | | Biological Laboratory, Maintenance :— | | | |
| | | C. Taylor ..... | Alterations to camera..... ..... | .. ..... | 14 40 | |
| | | Prof. R. R. Wright..... | To pay J. Foster, wire, etc..... | 2 40 | | |
| | | do .... | To pay Grand Trunk Railway, freight on spirits..... | 1 75 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| do ..... | To pay duty on spirits ..... | | 99 35 | | | |
| do ..... | Petty disbursements ..... | $66 14 | | | | |
| | | 19 00 | | | | |
| | | | 85 64 | | | |
| | | | | 189 14 | | |
| Robinson & Heath ..... | Freight on wax models ..... | $14 15 | | | | |
| | Brokerage ..... | 0 75 | | | | |
| | | | | 111 90 | | |
| W. E. Sanders & Co .... | Chemicals ..... | | ..... | 5 27 | | |
| Royal Oil Co ..... | Paraffin oil ..... | | ..... | 5 75 | | |
| Consumers' Gas Co ..... | Gas ..... | | 4 23 | | | |
| do .... | do ..... | | 21 85 | | | |
| do .... | do ..... | | 28 40 | | | |
| | | | | 54 48 | | |
| R. Friedlander & Sohn .. | Books ..... | | .. ..... | 5 86 | | |
| Dr. L. M. Underwood .. | Fungi ..... | | ..... ..... | 6 35 | | |
| Dugald Cameron and wife | Salary as caretakers ..... | $40 00 | | | | |
| do do | do | 53 34 | | | | |
| | | | 93 34 | | | |
| do do | do 6 mos ..... | | 240 00 | | | |
| | | | | 333 34 | | |
| Mrs. Labillister ..... | Scrubbing ..... | | ..... | 8 00 | | |
| Lyman Bros. & Co ... | Chemicals ..... | | ..... | 11 28 | | |
| Water Works Dept ..... | Water supply ..... | $39 89 | | | | |
| | | 54 20 | | | | |
| | | | | 94 09 | | |
| Fletcher Mfg. Co ..... | Hardware ..... | | .... ..... | 15 55 | | |
| Eimer & Amend ..... | Chemicals ..... | $7 33 | | | | |
| | Cost of dft ..... | 0 25 | | | | |
| | | | | 7 58 | | |
| T. L. Hicks ..... | Repairing electric bells ..... | | .. ..... | 1 25 | | |
| Wm. Menzies ..... | do microscopes and blow pipes. | | ..... | 17 00 | | |
| Elias Rogers & Co ..... | Coal ..... | | ..... | 207 10 | | |
| Wm. Simpson ..... | Fitting up cases ..... | | ..... | 88 65 | | |
| John Catto ..... ..... | Scrubbing cloths, etc ..... | | ..... | 5 92 | | |
| | | | | 1085 91 | | |
| | Transferred from Biological Laboratory building account, Elias Rogers coal | | ..... | 176 93 | | |
| | | | | | 1262 84 | |
| | Geological Museum :— | | | | | |
| Rev. A. Dowsley ..... | Specimens ..... | | ..... | 25 00 | | |
| Eimer & Amend ..... | Platinum wire ..... | $7 82 | | | | |
| | Draft ..... ..... | 0 25 | | | | |
| | | | | 8 07 | | |
| | | | | | 33 07 | |
| *Carried forward* ..... | 99322 98 | *Carried forward* ..... | ..... | ..... | ..... | ..... |

No. 2.—UNIVERSITY OF TORONTO.—*Continued.*

| Receipts. | $ c. | To Whom Paid. | Service. | $ c. | $ c. | $ c. |
|---|---|---|---|---|---|---|
| *Brought forward* | 99322 98 | | *Brought forward* | | | |
| | | | Biological Laboratory outfit:— | | | |
| | | John Catto & Co. | Dusters | | 26 68 | |
| | | Toronto Gas Stove and Supply Co. | Gas stove | | 8 00 | |
| | | Geo. A. Goodeve | Moving articles from University Building to Biological Laboratory Building | | 15 00 | |
| | | Albert Whale | Repairing chairs, tables, etc. | | 10 25 | |
| | | James Iredale | Copper bath | | 50 00 | |
| | | W. J. Lang | Plants | | 6 90 | |
| | | Robinson & Heath | Freight, etc. | | 42 86 | |
| | | The Steele Bros. | Flower pots | | 10 92 | |
| | | Fletcher Manf'g Co. | Tinware, brushes, etc. | 19 28 | | |
| | | do | Tin pails | 5 25 | | |
| | | | | | 24 53 | |
| | | Chas. Rogers, Sons & Co. | Step ladders | | 5 25 | |
| | | Dr. Robt. Muencke | Gas and water fixtures | | 88 88 | |
| | | Glover Harrison Estate. | Dishes, jars, etc | | 26 64 | |
| | | Aikenhead & Crombie | Hardware | | 72 95 | |
| | | Prof. R. R. Wright | Petty disbursements | | 20 75 | |
| | | Wm. Simpson | Cupboard | | 33 45 | |
| | | Lyman Bros. & Co. | Chemicals | | 23 70 | |
| | | | | | | 466 76 |
| | | | Lecture room:— | | | |
| | | Wm. Simpson | Alterations Prof. Wright's room | | | 325 00 |
| | | | Pensions (Professors):— | | | |
| | | J. M. Hirschfelder | Six months' pension | 500 00 | | |
| | | do | do do | 500 00 | | |
| | | | | | | 1000 00 |
| | | | Pensions (Servants):— | | | |
| | | Geo. Goodwin | Six months' pension | 72 00 | | |
| | | do | do do | 72 00 | | |
| | | | | | 144 00 | |
| | | B. Fitzpatrick | do do | 48 00 | | |
| | | do | do do | 48 00 | | |
| | | | | | 96 00 | |
| | | | | | | 240 00 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | Insurances :— | | | | |
| Wood & Macdonald .... | | Premium Biological building..... .. | 25 00 | | | |
| do .... | | Carpenters' risk, do ....$25 00 | | | | |
| do ... | | do lo .... 25 00 | | | | |
| | | | 50 00 | | | |
| do .... | | Premium boilers, University building. | 80 00 | | | |
| do .... | | do fittings, Biological do .. | 35 00 | | | |
| | | | | 190 00 | | |
| Atlas Assurance Co..... | | do University building..... | ..... | 100 00 | | |
| National Assurance Co.. | | do do ..... | ..... | 100 00 | | |
| Glasgow and London Assurance Co ..... | | do do ..... | ..... | 100 00 | | |
| Eastern Assurance Co... | | do do ..... | ..... | 100 00 | | |
| Commercial Union Assurance Co ..... | | do do ..$150 00 | | | | |
| | | Less rebate..... 141 00 | | | | |
| | | | | 9 00 | | |
| Western Assurance Co.. | | Premium, University building ..... | ..... | 75 00 | | |
| Ætna Insurance Co..... | | do do .. ..... | ..... | 75 00 | | |
| Phœnix Ins. Co. of Eng. | | do on Library ..... | ..... | 35 00 | | |
| London Ass. Corporation | | do S. Lodge and Cottages .... | 26 00 | | | |
| do do | | do Museum ..... | 10 50 | | | |
| | | | | 36 50 | | |
| Glasgow & London Assurance Co ..... | | do do ..... | ... ..... | 10 50 | | |
| | | | | | | 831 00 |
| | | Prizes, University College :— | | | | |
| W. H. VanderSmissen.. | | To pay for prizes ..... | ..... | 55 00 | | |
| Rowsell & Hutchison... | | Books..... | 65 00 | | | |
| do do | | do ..... | 31 24 | | | |
| | | | | 96 24 | | |
| | | | | 151 24 | | |
| | | Less returned per Registrar..... | ..... | 105 62 | | |
| | | | | | | 45 62 |
| | | Telephones : | | | | |
| Bell Telephone Co..... | | Telephone at University building ... | 30 00 | | | |
| do ..... | | do Bursar's office ..... | 50 00 | | | |
| do ..... | | do Biological building .... | 15 00 | | | |
| | | | | | | 95 00 |
| | | President's house : — | | | | |
| Sir Daniel Wilson ..... | | Allowance for rent (9 months)..... | ..... | ..... | | 600 00 |
| | | Valuation Fees :— | | | | |
| Watt & Miles .... ..... | | *Re* Peter Kartes, $3 ; *re* F. Shoemaker, | ..... | 6 00 | | |
| | | $3 ..... ..... | ..... | 14 40 | | |
| H. T. Strickland ..... | | do J. Crowley and T. Morgan. . . ... | 10 20 | | | |
| V. B. Wadsworth .. .. | | do Merry, Campbell, Patterson & West. | 5 00 | | | |
| do ..... | | do Barber..... ..... | | | | |
| | | | | 15 20 | | |
| *Carried forward*..... | 99322 98 | *Carried forward* .... .... | ..... | .... ... ... | | ..... |

No. 2.—UNIVERSITY OF TORONTO.—*Continued.*

| Receipts. | $ c. | To Whom Paid. | Service. | $ c. | $ c. | $ c. |
|---|---|---|---|---|---|---|
| *Brought forward* | 99322 98 | | *Brought forward* | | | |
| | | | Valuation Fees—*Continued.* | | | |
| | | M. C. Bogert. | *Re* J. W. Stewart | | 7 50 | |
| | | Chas. King | do W. W. Mason | 10 00 | | |
| | | do | do Todd | 10 00 | | |
| | | do | do Hunter | 5 00 | | |
| | | do | do Kartes | 5 00 | | |
| | | | | | 30 00 | |
| | | Elijah Prosser | do E. T. Wright | | 5 00 | |
| | | | | | 78 10 | |
| | | | Less amounts repaid | | 30 50 | |
| | | | | | | 47 60 |
| | | | Commission on Loans:— | | | |
| | | | Amounts paid to agents (see Statement No. 11) | | | 191 00 |
| | | | Contingent Fund:— | | | |
| | | | Amount transferred to this account by order of the Board of Trustees | | | 5000 00 |
| | | | Medical Faculty Surplus:— | | | |
| | | | Amount transferred to this account, being one year's interest at 5 per cent. | | | 329 70 |
| | | | Balance transferred to Biological Laboratory building account per Order in Council, 8th March, 1888 | | | 9247 10 |
| | 99322 98 | | | | | 99322 98 |

J. E. BERKELEY SMITH,
*Bursar.*

Bursar's Office,
Toronto, 2nd July, 1890.

## No. 3.—UNIVERSITY OF TORONTO

The Bursar's Statement of Receipts and Expenditures on account of the Biological Laboratory Building for the year ending 30th June, 1890.

| Receipts. | $ c. | To Whom Paid. | Service. | $ c. | $ c. |
|---|---|---|---|---|---|
| | | | Balance 30th June, 1889 | | 24313 18 |
| Transferred to Biological Laboratory maintenance account, Elias Rogers & Co., coal | 176 93 | Keith & Fitzsimmons | Plumbing and gasfitting | 400 00 | |
| | | do | do | 300 00 | |
| | | do | do | 920 92 | |
| | | | | | 1620 92 |
| Balance to Credit Income Account transferred to this account as per Order in Council 8th March, 1888 | 9247 10 | Wm. Simpson | Carpenter work | 500 00 | |
| | | do | Fittings | 1000 00 | |
| | | do | Carpenter work | 1200 00 | |
| | | do | Fittings | 700 00 | |
| | | do | do | 500 00 | |
| | | do | Carpenter work | 299 38 | |
| | | do | Fittings | 231 73 | |
| | | | | | 4431 11 |
| Balance 30th June, 1890 | 31694 11 | R. Rennie & Son | Tiles and slating | | 192 00 |
| | | St. Lawrence Foundry Co | Ironwork | | 69 00 |
| | | Rice Lewis & Son | Tile grate and gas log | 33 25 | |
| | | do | Hardware | 313 28 | |
| | | | | | 346 53 |
| | | Estate of Lionel Yorke | Stone and brick work | 1761 93 | |
| | | do | Fence stones | 123 00 | |
| | | | | | 1884 93 |
| | | J. Cleary | Sodding | 60 00 | |
| | | do | do | 70 00 | |
| | | do | do | 27 80 | |
| | | | | | 157 80 |
| | | Kitchener & Son | Painting and glazing | 800 00 | |
| | | do | do | 200 00 | |
| | | do | do | 790 00 | |
| | | do | do | 234 50 | |
| | | | | | 2024 50 |
| *Carried forward* | 41118 14 | | *Carried forward* | | |

No 3.—UNIVERSITY OF TORONTO.—*Continued.*

| Receipts. | $ c. | To Whom Paid. | Service. | $ c. | $ c. |
|---|---|---|---|---|---|
| *Brought forward* | 41118 14 | | *Brought forward* | | |
| | | A. Gardiner & Co. | Granolithic | | 160 25 |
| | | Elliott & Son | Plaster disc | | 45 15 |
| | | Smead, Dowd & Co. | Heaters | | 76 50 |
| | | A. Shipway | Iron fence | 200 00 | |
| | | do | do | 352 00 | |
| | | do | Electric bells | 7 00 | |
| | | | | | 559 00 |
| | | T. G. Rice | Iron work at animal room | | 231 00 |
| | | J. T. Wilson | Flue and pipes | | 12 95 |
| | | Unwin, Browne & Sankey | Survey of road | | 7 50 |
| | | G. Ringham & Son | Tinsmith work and fittings, etc | | 68 10 |
| | | Hemming Bros. | Drawer's pulls | | 17 05 |
| | | Geo. Rudlen | Plastering | | 445 00 |
| | | Canada Office and School Furniture Co. | Lecture room seats | | 940 00 |
| | | Chas. Rogers & Sons Co'y | Chairs, stools, etc | | 104 75 |
| | | Bennett & Wright | Heating apparatus | | 786 00 |
| | | Johnston Electric Apparatus Co. | Regulating heating apparatus | | 481 25 |
| | | Elias Rogers & Co. | Coal | | 176 93 |
| | | Dr. Robt. Muencke | Gas and water fixtures | | 170 00 |
| | | John Kay, Son & Co. | Blinds, linoleum, etc | | 308 43 |
| | | D. B. Dick | Commission as architect (balance) | | 1488 31 |
| | 41118 14 | | | | 41118 14 |

Bursar's Office,
Toronto, 2nd July, 1890.

J. E. BERKELEY SMITH,
*Bursar.*

## No. 4.—UNIVERSITY OF TORONTO.

The Bursar's Statement of Receipts and Expenditures on account of the Biological Laboratory Student's Fund for the year ending 30th June, 1890.

| Receipts. | $ c. | To Whom Paid. | Service. | $ c. | $ c. |
|---|---|---|---|---|---|
| Balance 30th June, 1889 | 293 98 | Rowsell & Hutchison | Printing labels | | 15 00 |
| Fees per Prof. R. R. Wright | 450 00 | Lyman, Sons & Co | Microscopes | 141 00 | |
| do | 250 00 | do | Chemicals | 96 60 | |
| do | 3 00 | | | | 237 60 |
| Balance 30th June, 1890 | 13 94 | E. Lietz | Microscopes | | 190 67 |
| | | Robinson & Heath | Duty, freight, etc., $58.29, $47.27, $17.75 | | 123 31 |
| | | Hemming Bros | Slide boxes | 42 00 | |
| | | do | do | 67 00 | |
| | | do | do | 42 00 | |
| | | | | | 151 00 |
| | | Klone & Müller | Slide glasses, etc | | 141 46 |
| | | J. C. Fell & Co | Rubber stamp | | 4 00 |
| | | Dr. Shaw | Frogs, $16, $10. | | 26 00 |
| | | John Catto & Co | Cotton | | 4 06 |
| | | Dr. Robert Muencke | Specimens, etc | | 70 00 |
| | | Prof. R. R. Wright | Petty disbursements | | 23 69 |
| | | James W. Queen | Oblong covers | | 3 84 |
| | | S. Stephens & Son | Slides, covers, etc | | 20 25 |
| | 1010 92 | | | | 1010 92 |

J. E. BERKELEY SMITH,
*Bursar.*

Bursar's Office,
Toronto, 2nd July, 1890.

## No. 5.- UNIVERSITY OF TORONTO.

The Bursar's Statement of Receipts and Disbursements on account of Medical Faculty for the year ending 30th June, 1890.

| Receipts. | $ c. | To Whom Paid. | Service. | $ c. | $ c. |
|---|---|---|---|---|---|
| Balance 30th June, 1889 | 1418 26 | Consumers' Gas Co | Gas | 11 88 | |
| ees | 19139 00 | do | do | 4 75 | |
| | | do | do | 15 19 | |
| | | do | do | 30 04 | |
| | | do | do | 19 35 | |
| | | | | | 81 21 |
| | | Alex. Millard | Fees on subjects | 30 00 | |
| | | do | do | 18 80 | |
| | | do | do | 20 00 | |
| | | do | Cartage, etc. | 82 00 | |
| | | do | Subjects | 20 00 | |
| | | do | Fees on subjects | 15 00 | |
| | | do | Subjects and fees on subjects | 75 10 | |
| | | | | | 260 90 |
| | | Blachford & Son | Preparing subject, fees, etc. | 30 00 | |
| | | do | Subject | 20 00 | |
| | | do | Fees on subject | 30 00 | |
| | | | | | 80 00 |
| | | T. R. Whiteside | Tax collector, local improvement tax | | 11 33 |
| | | W. McGillivray | Stove for Microscopic Laboratory | | 4 00 |
| | | J. E. Bryant & Co | Advertising in *Canadian Practitioner* | 80 00 | |
| | | do | Printing pamphlets | 92 90 | |
| | | do | Advertising | 50 00 | |
| | | do | do | 25 00 | |
| | | | | | 247 90 |
| | | Bell Telephone Co | Rent telephone $15 and $15. | | 30 00 |
| | | T. E. Carbert | Glazing, etc | 16 00 | |
| | | do | do | 3 00 | |
| | | | | | 19 00 |
| | | Dr. Alex. Primrose | Illustrated plates, freight, on same etc. | | 29 97 |
| | | W. Piggott | Painting, calsomining, etc. | | 42 0 |
| | | Daniel Gordon | Subject | | 15 00 |
| | | *Grip* Printing and Publishing Co | Advertising | 8 00 | |
| | | do do | do | 16 00 | |
| | | do do | do | 8 00 | |
| | | | | | 32 00 |
| | | *Mail* Printing Co | do | | 3 00 |
| | | *Empire* Printing Co | do | | 3 00 |
| | | *World* Printing Co | Advertising | | 4 50 |
| | | James F. Wilson | Coal oil | | 4 50 |
| | | R. W. Doran | Advertising | | 6 00 |

| | | | |
|---|---|---|---|
| Geo. Boxall | Hardware | | 48 40 |
| Geo. Guest | Plumbing | | 42 14 |
| A. M. Hobberlin | Pants for janitor | | 3 50 |
| Fiddes & Hogarth | Galvanized ironwork | | 18 80 |
| Bank of Montreal, for Inland Rev. Dept. | Methylated spirits | 115 70 | |
| do do | do | 58 57 | |
| do do | do | 55 50 | |
| | | | 229 77 |
| Toronto School of Medicine | Janitor's wages, telephone, repairs, etc. | 352 01 | |
| do do | Microscopes | 557 00 | |
| do do | Rent | 1200 00 | |
| | | | 2109 01 |
| Edward Batters | Janitor's wages, 12 months | | 360 00 |
| Mrs. C. Batters | Washing towels | 7 00 | |
| do | do | 5 62 | |
| | | | 12 62 |
| *Canada Educational Monthly* | Advertising | | 9 00 |
| Montreal *Medical Journal* Co | do | | 30 00 |
| Dr. Adam H. Wright | Postage stamps | 15 00 | |
| do | Petty disbursements | 50 00 | |
| do | Postage stamps | 18 00 | |
| | | | 83 00 |
| Waterworks Department | Water supply | 32 50 | |
| do | do | 13 00 | |
| | | | 45 50 |
| Dr. W. H. Ellis | Allowance as Professor | | 500 00 |
| *Maritime Medical News* | Advertising and Cost of order, $36.50, 20c. | | 36 70 |
| W. Lloyd Wood | Chemicals | 16 73 | |
| do | do | 4 89 | |
| | | | 21 62 |
| Jos. Rogers | Fee on subject | | 5 00 |
| John Wright | Plumbing | | 53 99 |
| Austin T. Gainsby | Chemicals | | 50 54 |
| Matthews Bros. & Co | Framing illustrations | | 31 33 |
| W. McGill & Co | Coal and wood | | 314 09 |
| H. Stone | Fee, subject | | 10 00 |
| H A. Collins | Furnishings | | 96 25 |
| Rowsell & Hutchison | Stationery and printing | | 290 98 |
| J. Stevens & Sons | Surgical instruments | | 4 80 |
| Withrow & Hillock | Carpenter work | | 147 35 |
| A. Nelson (Rossin House) | Deficit *re* banquet, balance due | | 161 75 |
| Dr. H. W. Aikens | Demonstrator of Anatomy | | 108 92 |
| Dr. H. H. Wright | Professor of Principle and Practice of Medicine | | 1091 04 |
| Dr. L. M. McFarlane | Professor of Clinical Surgery | | 760 60 |
| Dr. W. W. Ogden | Professor of Medical Jurisprudence | | 544 60 |
| Dr. J. Caven | Demonstrator of Pathological Histology, etc. | | 384 92 |
| Dr. J. E. Graham | Professor of Clinical Medicine | | 760 60 |
| Dr. J. Ferguson | Demonstrator of Anatomy | | 326 75 |
| *Carried forward* | *Carried forward* | | |

*Carried forward* $20587 26

No. 5.—UNIVERSITY OF TORONTO.—*Continued.*

| Receipts. | $ c. | To Whom Paid. | Service. | $ c. | $ c. |
|---|---|---|---|---|---|
| *Brought forward* | 20587 26 | | *Brought forward* | | |
| | | Dr. O. R. Avison | Demonstrator of Materia Medica and Pharmacy | | 108 92 |
| | | Dr. J. Thorburn | Professor of Pharmacology | | 1091 04 |
| | | Dr. A. H. Wright | Professor of Obstetrics | | 981 28 |
| | | Dr. R. A. Reeve | Professor of Ophthalmology and Otology | | 217 84 |
| | | Dr. G. H. Burnham | Clinical Lecturer on Ophthalmology | | 108 92 |
| | | Dr. G. A. Peters | Demonstrator of Anatomy | | 108 92 |
| | | Dr. M. H. Aikens | Professor of Topographical Anatomy | | 435 68 |
| | | Dr. Uzziel Ogden | Professor of Gynecology | | 1091 04 |
| | | Dr. G. R. McDonagh | Instructor on Laryngology | | 108 92 |
| | | Dr. W. Oldwright | Professor of Hygiene | | 380 30 |
| | | Dr. J. H. Richardson | Professor of Descriptive and Surgical Anatomy | | 1091 04 |
| | | Dr. J. H. Cameron | Professor of Principles of Surgery | | 326 75 |
| | | Dr. W. T. Aikens | Professor of Practice of Surgery | | 1091 04 |
| | | Dr. A. McPhedran | Assistant Lecturer on Medicine | | 217 84 |
| | | Dr. Thos. McKenzie | Demonstrator of Anatomy, $200.04, $217.84 | | 417 88 |
| | | Dr. Daniel Clark | Professor of Medical Psychology | | 240 00 |
| | | L. F. Barker | Scholarship | | 50 00 |
| | | W. H. Philp | do | | 30 00 |
| | | W. N. Barnhart | do | | 50 00 |
| | | G. B. McArtney | do | | 30 00 |
| | | T. H. Middleton | do | | 50 00 |
| | | H. A. Bruce | do | | 30 00 |
| | | | Transferred to Medical Faculty Surplus account as per order of board | | 2259 97 |
| | | | Balance 30th June, 1890 | | 500 00 |
| | 20587 26 | | | | 20587 26 |

Bursar's Office,
Toronto, 2nd July, 1890.

J. E. BERKELEY SMITH,
*Bursar.*

## No. 6.—UNIVERSITY OF TORONTO.

The Bursar's Statement of Receipts and Expenditure on Museum Building Account for the year ending 30th June, 1890.

| Receipts. | $ c. | To Whom Paid. | Service. | $ c. | $ c. |
|---|---|---|---|---|---|
| Balance 30th June, 1890 ..... | 7513 70 | *Empire* Printing Co..... | Advertising tenders..... | ..... | 1 50 |
| | | *World* Printing Co ..... | do ..... | ..... | 1 20 |
| | | *Globe* Printing Co..... | do ..... | ..... | 1 80 |
| | | *Mail* Printing Co..... | do ..... | ..... | 1 80 |
| | | Joseph Yorke ..... | Contract, stonework..... | 1200 00 | |
| | | do ..... | do ..... | 2000 00 | |
| | | do ..... | do ..... | 1500 00 | |
| | | do ..... | do ..... | 1400 00 | |
| | | do ..... | do ..... | 700 00 | |
| | | | | | 6800 00 |
| | | Wm. Simpson..... | Carpentering work ..... | ..... | 600 00 |
| | | Thos. Foley ..... | Drains ..... | ..... | 100 00 |
| | | H. J. & W. A. Browne ..... | Surveying..... | ..... | 5 00 |
| | | *Evening Telegram*..... | Advertising *re* tenders ... ..... | ..... | 2 40 |
| | 7513 70 | | | | 7513 70 |

J. E. BERKELEY SMITH,
*Bursar.*

Bursar's Office,
Toronto, 2nd July, 1890.

## No. 7.—UNIVERSITY OF TORONTO.

The Bursar's Statement of Receipts and Expenditures on account of Building Restoration Fund for the year ending 30th June, 1890.

| Receipts. | $ c. | To whom Paid. | Service. | $ c. | $ c. |
|---|---|---|---|---|---|
| Insurance on building, loss by fire | 81000 00 | Wm. Simpson | Fencing and repairs | | 728 15 |
| W. G. Harris, scrap iron, etc | 306 94 | James Gaylord | Wages of men working on building | 323 33 | |
| James Morrison, brass, etc | 21 45 | do | do do | 265 18 | |
| Thos. Dean, brass, etc | 95 08 | | | | 588 51 |
| W. J. McGuire & Co, metal | 7 87 | Rice Lewis & Son | Wheelbarrows | | 13 35 |
| | | John B. Smith & Son | Lumber | | 106 19 |
| | | *Telegram* | Advertising tenders *re* scrap iron | | 2 40 |
| | | | Balance 30th June, 1890 | | 79992 71 |
| | 81431 34 | | | | 81431 34 |

J. E. BERKELEY SMITH,
*Bursar.*

Bursar's Office,
Toronto, 2nd July, 1890.

## No. 8.—UNIVERSITY OF TORONTO.

The Bursar's Statement of Receipts and Disbursements on account Convocation Hall Fund for the year ending 30th June, 1890.

| Receipts. | $ c. | Disbursements. | $ c. |
|---|---|---|---|
| Sir Daniel Wilson | 100 00 | Balance 30th June, 1890 | 3604 40 |
| Rev. A. Dowsley | 4 40 | | |
| Jos. Cawthra | 500 00 | | |
| Dr. John Hoskin | 500 00 | | |
| Geo. A. Cox | 2500 00 | | |
| | 3604 40 | | 3604 40 |

J. E. BERKELEY SMITH,
*Bursar.*

Bursar's Office,
Toronto, 2nd July, 1890.

## No. 9.—UNIVERSITY OF TORONTO.

The Bursar's Statement of Receipts and Disbursements on account Medical Faculty Surplus Account for the year ending 30th June, 1890.

| Receipts. | $ c. | Disbursements. | $ c. |
|---|---|---|---|
| Balance 30th June, 1889 | 6594 72 | Balance 30th June, 1890 | 11526 39 |
| Transferred from Income account | 329 70 | | |
| do University Fees acct... | 2342 00 | | |
| do Medical Faculty acct... | 2259 97 | | |
| | 11526 39 | | 11526 39 |

J. E. BERKELEY SMITH,
*Bursar.*

ursar's Office,
Toronto, 2nd July, 1890.

## No. 10.—UNIVERSITY OF TORONTO.

The Bursar's Statement of Receipts and Disbursements on account Library Restoration Fund for the year ending 30th June, 1890.

| Receipts. | $ c. | Disbursements. | $ c. |
|---|---|---|---|
| Amount of insurance | 50000 00 | Expenses *re* visit of W. H. Vander Smissen to American libraries | 100 00 |
| Thomas Langton, subscription | 100 00 | Transferred to Library account | 1000 00 |
| D. B. Dick " | 500 00 | Balance 30th June, 1890 | 51083 58 |
| Rowsell & Hutchison " | 250 00 | | |
| Major Greig " | 100 00 | | |
| Prof. J. H. Cameron " | 100 00 | | |
| Swan Bros " | 10 00 | | |
| W. A. Parlane " | 20 00 | | |
| Mrs. Greene " | 5 00 | | |
| W. C. Chewitt " | 100 00 | | |
| R. S. Cassels " | 100 00 | | |
| J. G. Brown " | 25 00 | | |
| W. H. Merritt " | 15 00 | | |
| B. L. Johnson " | 25 00 | | |
| A. H. Gibbard " | 100 00 | | |
| Prof. Caven " | 100 00 | | |
| G. T. Blackstock " | 50 00 | | |
| Fletcher Manufacturing Co. | 10 00 | | |
| Aikenhead & Crombie " | 25 00 | | |
| W. R. Meredith " | 100 00 | | |
| Dr. W. H. Pike " | 258 33 | | |
| Dr. R. A. Reeve " | 100 00 | | |
| Dr. Wm. Burt " | 1 00 | | |
| J. J. Mackenzie " | 40 25 | | |
| W. N. Miller " | 40 00 | | |
| | 52183 58 | | 52183 58 |

J. E. BERKELEY SMITH,
*Bursar.*

Bursar's Office,
Toronto, 2nd July, 1890.

## NO. 11.—UNIVERSITY OF TORONTO.

The Bursar's Statement as to Loans on Mortgage for the year ending 30th June, 1890.

| Name. | Amount. | Commission. |
|---|---|---|
| Miss A. H. Johnson | 150 00 | |
| J. O. Hagan | 999 00 | |
| G. W. Thomson | 3,510 00 | 20 00 |
| E. L. Yourex | 1,990 00 | 16 00 |
| J. H. Moore | 1,750 00 | 10 50 |
| Joseph Rorke | 1,000 00 | 5 00 |
| J. W. Anderson | 1,500 00 | |
| W. W. Mason | 3,000 00 | 30 00 |
| W. H. Rutledge | 1,205 87 | |
| A. J. Cresswell | 2,500 00 | |
| J. A. Macdonald | 950 00 | |
| Robert Greer | 600 00 | |
| F. Wilcox | 1,300 00 | |
| M. Clarke | 400 00 | |
| Abram Johnston | 534 50 | |
| J. & J. Buchanan | 700 00 | |
| J. B. Doan | 2,515 00 | 27 50 |
| Wm. Badley | 2,000 00 | 20 00 |
| J. R. Todd | 1,300 00 | |
| Kate Hodgson | 250 00 | |
| Sarah Miller | 1,000 00 | 5 00 |
| J. J. Snider | 3,000 00 | |
| Wm. Burr | 655 50 | 6 00 |
| Julius Schoen | 700 00 | 7 00 |
| John Young | 51 15 | |
| Wm Barber | 3,000 00 | |
| W. H. Rutledge | | 18 00 |
| Robert Greer | | 6 00 |
| Kartes-Wedow | | 20 00 |
| | $36,561 02 | $191 00 |

J. E. BERKELEY SMITH,
*Bursar.*

Bursar's Office,
Toronto, 2nd July, 1890.

## NO. 12.—UNIVERSITY OF TORONTO.

The Bursar's Statement of Receipts and Disbursements on acct. of Insurances *re* Mortgages for the year ending 30th June, 1890.

| Receipts. | $ c. | Disbursements. | $ c. |
|---|---|---|---|
| S. H. Farrell | 14 00 | C. Shepherd | 7 20 |
| Mrs. M. J. Deacon | 6 11 | W. H. Ferguson | 10 00 |
| J. & W. J. Hughes | 8 00 | R. C. Chatterson | 7 50 |
| W. McCallum | 13 05 | D. McCaulay | 1 00 |
| George Inglis | 5 00 | W. Hughes | 50 |
| Abbott & Watson | 50 | P. Kartes | 6 00 |
| Donald Mackay | 5 40 | J. Foley | 3 50 |
| A. Robb | 12 00 | W. D. Hutson | 24 00 |
| Catherine McDole | 30 00 | F. Blanchard | 6 00 |
| D. McAuley | 11 00 | W. D. Hutson | 12 00 |
| W. & J. Nicoll | 7 00 | J. R. Marshall | 50 |
| George Turvey | 12 00 | W. G. Bidwell | 42 50 |
| Robert Myers | 50 | A. D. Spears | 10 50 |
| J. E. Proctor | 31 00 | J. McCauley | 21 00 |
| H. S. Moore | 15 00 | W. Meyers | 21 50 |
| J. R. Marshall (Gilroy) | 50 | E. Cheyne | 16 25 |
| Hugh McLeod | 4 00 | W. D. Hutson | 24 60 |
| W. D. Hutson | 24 00 | J. Benson | 5 00 |
| Thomas Gemmell (Jno. Dick) | 10 00 | D. Casey | 6 50 |
| A. D. Spears | 10 50 | S. Miller | 50 |
| Duncan Dewar (Jas. Dewar) | 16 50 | F. Fawcett | 2 00 |
| Susannah Miller | 11 25 | J. H. Lee | 3 00 |
| F. Filsinger | 12 50 | John Rennie | 36 00 |
| A. Johnson | 9 50 | W. G. Bidwell | 5 00 |
| J. & D. Farelly | 3 00 | N. Penfold | 50 |
| A. Johnson | 4 00 | J. A. Macdonald | 3 25 |
| W. Conquergood | 6 15 | W. G. Sexsmith | 18 15 |
| R. West | 1 00 | Samuel Belch | 3 50 |
| John Smith | 7 20 | John Smith | 7 20 |
| Jonathan Shisler | 10 00 | J. McNilledge | 5 00 |
| W. G. Bidwell | 5 00 | Mrs. A. J. Caswell | 30 75 |
| W. G. Sexsmith | 18 15 | W. J. Fitch | 7 00 |
| Chas. Shepherd | 7 00 | R. A. Galway | 8 00 |
| W. Dever | 8 00 | W. H. Rutledge | 7 00 |
| H. Esplen | 7 00 | Mrs. H. Collins | 21 00 |
| Mrs. Cheyne | 16 25 | W. Chambers | 5 00 |
| W. D. Hutson | 36 60 | C. P. Meagher | 2 50 |
| W. Meyers | 21 50 | J. B. Doan | 9 00 |
| James McCauley | 21 00 | P. Kartes | 4 50 |
| J. A. Macdonald | 3 25 | C. Doepel | 14 00 |
| Chas. Doepel | 14 00 | J. Cooney | 3 00 |
| *Carried forward* | | *Carried forward* | |

No. 12.—UNIVERSITY OF TORONTO.—*Continued.*

| Receipts. | $ c. | Disbursements. | $ c. |
|---|---|---|---|
| *Brought forward* | ..... | *Brought forward* | ..... |
| Robt. Baird per (Solr.) | 2 50 | F. Wilcox | 5 00 |
| T. W. Follis | 4 00 | J. Rennie | 13 00 |
| W. Hewitt | 5 00 | Isaac Frederick | 6 00 |
| R. A. Galway | 8 00 | G. T. Jackson | 7 00 |
| J. McNilledge | 5 00 | J. R. Todd | 50 |
| W. Chambers | 5 00 | R. Oliver | 7 00 |
| Isaac Frederick | 6 00 | J. Hogan | 3 00 |
| A. J. Blain | 8 25 | James Nealon | 7 00 |
| Mrs. H. Collins | 21 00 | Wm. Badley | 7 50 |
| John Foley | 3 50 | S. Miller | 7 00 |
| Irwin Fawcett | 2 00 | E. & S. Dale | 20 15 |
| James Nealon | 7 00 | S. & J. Calvert | 8 90 |
| Arthur O'Leary | 2 50 | W. H. Clink | 3 50 |
| John W. Ross | 3 00 | G. Morton | 10 00 |
| Jacob S. Dainard | 2 00 | W. J. Morton | 10 63 |
| R. E. Chatterson | 7 50 | S. B. Stickel | 4 00 |
| Mark Kay | 13 00 | J. Schoen | 3 63 |
| Sidney B. Stickel | 4 00 | R. Edwards | 2 50 |
| F. & J. Philips | 58 50 | W. Wilson | 58 50 |
| John Downs | 8 00 | R. H. Bowes | 1 00 |
| W. H. Ferguson | 10 00 | Wm. Badley | 3 00 |
| Julius Schoen | 3 63 | D. McGregor | 5 00 |
| Frederick Shoemaker | 3 00 | S. B. Stickel | 2 00 |
| Chas. Shepherd | 7 00 | J. S. Dainard | 6 00 |
| M. A. McAdam | 3 00 | Isaac Petch | 7 00 |
| W. M. Lepard | 12 00 | C. Shepherd | 7 00 |
| M. Goettler | 30 00 | M. A. McAdam | 3 00 |
| S. & J. Calvert | 9 05 | Balance 30th June, 1890, carried to Income Acct. No. 2 | 108 38 |
| S. B. Stickel | 2 00 | | |
| Isaac Petch | 7 00 | | |
| Transfers from Loans, E. J. Robertson | 3 50 | | |
| Rebates—W. G. Bidwell, $10.25; S. Miller, $7; W. Badley, $7.50 | 24 75 | | |
| | $749 09 | | $749 09 |

J. E. BERKELEY SMITH,
*Bursar.*

Bursar's Office,
Toronto, 2nd July, 1890.

## UNIVERSITY OF TORONTO.

| | Dr. | Cr. |
|---|---|---|
| | $ c. | $ c. |
| No. 13.—Prince's Prize— | | |
| Balance, 30th June, 1889 | 105 83 | |
| Transferred to Income Account No. 2 | | 105 83 |
| | 105 83 | 105 83 |
| No. 14.—Pathological Laboratory— | | |
| Dr. Reeve subscription | 100 00 | |
| Dr. Burt do | 10 00 | |
| Balance, 30th June, 1890 | | 110 00 |
| | 110 00 | 110 00 |
| No. 15.—University Club and Gymnasium— | | |
| Balance 30th June, 1889 | 1,550 00 | |
| Dr. A. H. Wright subscription | 20 00 | |
| Balance, 30th June, 1890 | | 1,570 00 |
| | 1,570 00 | 1,570 00 |
| No. 16.—Physical Appartus Restoration Fund— | | |
| Amount of insurance, Physical Apparatus | 629 00 | |
| Rice Lewis & Son, lathe | | 613 42 |
| Balance, 30th June, 1890 | | 15 58 |
| | 629 00 | 629 00 |
| No. 17.—Microscopes Restoration Fund— | | |
| Amount of insurance | 305 00 | |
| Balance, 30th June, 1890 | | 305 00 |
| | 305 00 | 305 00 |

J. E. BERKELEY SMITH,
*Bursar.*

Bursar's Office,
Toronto, 2nd July, 1890.

## UNIVERSITY OF TORONTO.

| —— | Dr. | Cr. |
|---|---|---|
| | $ c. | $ c. |
| No. 18.—Furniture, etc., Restoration Fund— | | |
| Amount of insurance | 4,000 00 | |
| Balance, 30th June, 1890 | | 4,000 00 |
| | 4,000 00 | 4,000 00 |
| No. 19.—Museum Restoration Fund— | | |
| Amount of insurance | 8,000 00 | |
| Balance, 30th June, 1890 | | 8,000 00 |
| | 8,000 00 | 8,000 00 |
| No. 20.—Residence Extension Fund— | | |
| Sir Daniel Wilson, subscription | 100 00 | |
| Balance, 30th June, 1890 | | 100 00 |
| | 100 00 | 100 00 |
| No. 21.—Deposits— | | |
| Mrs. Coutts, per Chas. King | 100 00 | |
| Balance, 30th June, 1890 | | 100 00 |
| | 100 00 | 100 00 |
| No. 22.—Vice-Chancellor's Special Account— | | |
| Balance, 30th June, 1889 | 375 43 | |
| Vice-Chancellor's salary, 12 mos | 400 00 | |
| Daniel Hull, services as secretary of the American Scientific Association | | 100 00 |
| Expenses of banquet, *re* opening Biological Laboratory | | 245 10 |
| R. J. Lloyd, catering for do do | | 18 00 |
| George Harcourt & Son, gown and hood | | 86 50 |
| Balance, 30th June, 1890 | | 325 83 |
| | 775 43 | 775 43 |

J. E. BERKELEY SMITH,
*Bursar.*

Bursar's Office,
Toronto, 2nd July, 1890.

## UNIVERSITY OF TORONTO.

| —— | Dr. | Cr. |
|---|---|---|
| | $ c. | $ c. |
| No. 23.—Contingent Fund— | | |
| Balance, 30th June, 1889 | 14,549 80 | |
| Transferred to loans to cover deficiency on sale of Ann Brown's property | | 350 00 |
| Amount transferred from income account by order Board of Trustees | 5,000 00 | |
| Balance, 30th June, 1890 | | 19,199 80 |
| | 19,549 80 | 19,549 80 |
| No. 24.—Macdonald Bursary— | | |
| Balance, 30th June, 1889 | 50 00 | |
| S. J. Rothwell, scholar, allowance | | 50 00 |
| | 50 00 | 50 00 |
| No. 25.—Starr Bequest— | | |
| Balance, 30th June, 1889 | 1,582 42 | |
| D. Duncanson, rent of Starr Farm | 132 00 | |
| Rowsell & Hutchison, gold medal and case | | 37 13 |
| Balance, 30th June, 1890 | | 1,677 29 |
| | 1,714 42 | 1,714 42 |
| No. 26.—Physics Scholarship— | | |
| Received from American Association for Advancement of Science | 2,350 00 | |
| Balance, 30th June, 1890 | | 2,350 00 |
| | 2,350 00 | 2,350 00 |
| No. 27.—Ramsay Scholarship— | | |
| Received from Wm. Ramsay, Esq | 60 00 | |
| do do do | 949 42 | |
| Balance, 30th June, 1890 | | 1,009 42 |
| | 1,009 42 | 1,009 42 |

J. E. BERKELEY SMITH,
*Bursar.*

Bursar's Office,
Toronto, 2nd July, 1890.

## UNIVERSITY OF TORONTO.

Cash Balances as at 30th June, 1890.

| —— | Dr. | Cr. |
|---|---|---|
| | $ c. | $ c. |
| Cash on hand | 19,692 47 | |
| Bank of Commerce | 204,136 07 | |
| do Medical Faculty | 2,759 97 | |
| Capital | | 41,811 40 |
| Biological Laboratory Building Account | 31,694 11 | |
| do Students' App. Fund | 13 94 | |
| Medical Faculty | | 500 00 |
| Museum Building | 7,513 70 | |
| Building Restoration Fund | | 79,992 74 |
| Convocation Hall Fund | | 3,604 40 |
| Medical Faculty Surplus | | 11,526 39 |
| Library Restoration Fund | | 51083 58 |
| Pathological Laboratory | | 110 00 |
| University Club and Gymnasium | | 1,570 00 |
| Physical Apparatus Restoration Fund | | 15 58 |
| Microscopes Restoration Fund | | 305 00 |
| Furniture, etc., do do | | 4,000 00 |
| Museum do do | | 8,000 00 |
| Residence Extension Fund | | 100 00 |
| Vice-Chancellor's Special Account | | 325 83 |
| Contingent Fund | | 19,199 80 |
| Starr Bequest | | 1,677 29 |
| Deposits | | 100 00 |
| Physics Scholarship | | 2,350 00 |
| Ramsay do | | 1.609 42 |
| Blake do | | 1,250 00 |
| Moss do | | 2,000 00 |
| Daniel Wilson do | | 2,000 00 |
| William Mulock do | | 2,000 00 |
| George Brown do | | 1,054 82 |
| Political Science do | | 2,500 00 |
| Julius Rossin do | | 1,000 00 |
| Mary Mulock do | | 2,500 00 |
| Surplus Income Fund | | 23,247 53 |
| Students' Fund Gymnasium | | 410 27 |
| Coutt's Loan | 463 79 | |
| Prince's Prize Fund | | 900 00 |
| Lyle Oriental Medal | | 130 00 |
| | $266,274 05 | $266,274 05 |

J. E. BERKELEY SMITH,
*Bursar.*

Bursar's Office,
Toronto, 2nd July, 1890.

# RETURN

To an Order of the House of the 29th April, 1891, for copies of the judgments of Chief Justice Galt quashing the local option liquor By-laws adopted by the municipalities of Oakland, South Norwich and London West, under the authority of Section 18, of Cap. 56, of the Statutes of Ontario, 1890.

Presented to the Legislative Assembly,

By Command,

J. M. GIBSON,
*Secretary.*

Provincial Secretary's Office,
Toronto, 2nd May, 1891.

# RETURN.

## QUEEN'S BENCH DIVISION—*RE* MALCOLM AND OAKLAND; *RE* HUSON AND SOUTH NORWICH; *RE* JEFFERIES AND LONDON WEST—COPY JUDGMENT OF GALT, C.J., DELIVERED 22ND APRIL, 1891.

The first case was argued by McKenzie, Q.C., for the motion, and Harley contra; the second case was by DuVernet for the motion, and Titus contra; the third case by Cameron for the motion, and Fitzgerald contra.

These three motions are made to set aside three by-laws that had been passed in the respective municipalities. The by-laws are based on the 18th sec. of chap. 56, 53 Vic., which enacts that "The Council of every township, city, town and incorporated village may pass by-laws for prohibiting the sale by retail of spirituous, fermented or other manufactured liquors in any tavern, inn or other house or place of public entertainment and for prohibiting altogether the sale thereof in shops and places other than houses of public entertainment." There are several objections applied to each of these by-laws. The first is that there is no penalty enacted; the second is that the respective municipalities had no authority to pass the by-laws to take effect at once; and the last that the said by-laws are in excess of the authority of the Provincial Legislature.

To deal with the last objection. On reference to sec. 18, it will be found that the provision to which I have referred was at the date of confederation in force as part of the Consolidated Municipal Act, 29 and 30 Vic., chap. 51, sec. 249, sub-sec. 9, and by provision at the end of sec. 18 authorizing the Council to pass such by-laws, it is provided "that nothing in this section contained shall be construed into an exercise of jurisdiction by the Legislature of the Province of Ontario beyond the revival of provisions of law which were in force at the date of the passing of the B. N. A. Act." It appears to me that in framing sec. 18 of chap. 56 the provisions of the 29th and 30th Vic., to which I have referred, have been overlooked. The clause which under sec. 18 purports to be re-enacted has reference simply to shop and tavern licenses and it is sub-sec. 9 of sec. 249 which has been re-enacted. Judging from the whole statute, chap. 51, it will be seen that on reference to sec. 252 no such general provision as is now contended for under the present statute had application, because under sec. 252 it was positively enacted that no tavern or shop license should be necessary for selling any liquors in the original packages in which the same had been received from the importer or manufacturer, provided such package contain respectively not less than five gallons or one dozen bottles.

It is manifest from this that when the Legislature enacted the above sec. 249 it was not the intention that there should be a general prohibition but it was that the prohibition should be confined to shop and tavern licenses.

To give effect to the by-laws now before me, according to their literal expression, it would be positively illegal for the owner of a distillery to sell spirituous liquors at his distillery in case such a by-law was in force in the municipality in which the distillery was located, and it was quite manifest that such never was and never could have been the intention of the Legislature. Their intention was that the provision of sub-sec. 9, which is similar to sec. 18 of 53 Vic., applied only to cases of shop and tavern licenses.

Then as to the objection that there is no penalty. The case of *Hall* v. *Nixon*, L. R. 10 Q. B., page 152, appears to be in point. It is true that the quotation which I am about to make is not part of the judgment of the Court, but it is cited by Lush, J., as showing the inefficiency of a by-law to which no pecuniary penalty is attached. He says: "To secure the obedience to a by-law it is necessary that a penalty of some kind should be annexed to a breach of it, or otherwise the by-law will be nugatory. The only penalty

permitted by the law of England is a pecuniary one. That obedience to a by-law cannot be enforced by the imprisonment of the offender or by the forfeiture of his goods there are a multitude of authorities." On this ground also the by-law appears to me to be invalid.

Then as to the operation of the by-law. From the terms of the respective by-laws they were to go into force at once, and, therefore, a person in possession of a tavern or shop license would have been prohibited from carrying on his business. Now under the Liquor License Law, licenses remain in force until the 30th of April of each year, consequently it was not in the power of the municipality to pass a by-law interfering with the rights of license holders until their respective licenses had expired. It is quite unnecessary to consider the question as to the legislation being *ultra vires*, because by the Act itself the Legislature expressly limits the operation of the statute to the powers which they possessed and exercised at the date of the passing of the B. N. A. Act. Were it otherwise it appears to me that such an absolute prohibition as is contained in these respective by-laws would be an interference with trade and commerce which unquestionably are within the exclusive jurisdiction of the Dominion Parliament. As I have said before the authority exercised by the Legislature of Canada previous to Confederation was confined in this particular instance to tavern and shop licenses and did not authorize municipalities to prohibit the sale of liquors where the same had been received from the importer or manufacturer.

In my opinion, therefore, these by-laws must be quashed, but as they were enacted in accordance with the terms of sec. 18 there will be no costs beyond the costs of the motion and the argument. In several cases there was a vast number of affidavits filed. The costs of these are not to be taxed against the municipalities. This does not apply to such affidavits as in the opinion of the taxing officer were necessary to bring the by-laws before the Court.

BINDING SECT. AUG 23 1967